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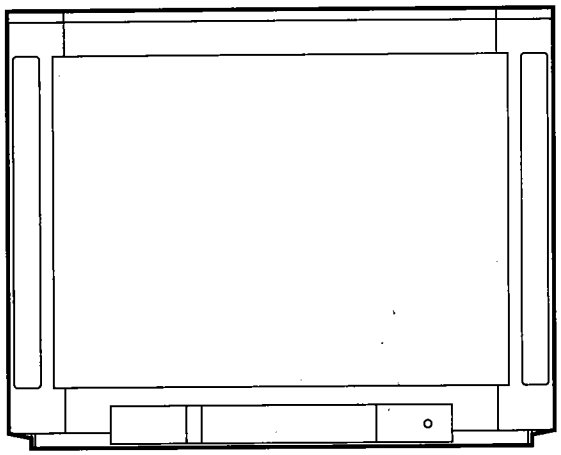
1995

MITSUBISHI

Service Manual

COLOR TV
YA-0B CHASSIS



MODEL

CS-40507
CS-40507C

CAUTION

Before servicing this chassis, it is important that the service person reads the "SAFETY PRECAUTIONS" and "PRODUCT SAFETY NOTICE" in this service manual.

SPECIFICATIONS

- **Power Input** : AC 120V; 60Hz
- **Power Consumption** : [CS-40507] 260W [CS-40507C] 364VA
- **Reception Frequency** : VHF54~470MHz UHF470~806MHz
- **Speaker** : 1.6"Round type,2pcs. : 3.7"Round type,2pcs.
- **Picture Tube** : M100KWX13X
- **Picture High Voltage** : 34.0kV(at 0A)
- **Cabinet Dimensions** : 39.6"(W)×32.0"(H)×26.7"(D)
- **Weight** : 242.8lbs

- Weight and dimensions shown are approximate.
- Design and specifications are subject to change without notice.

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SAFETY PRECAUTIONS

NOTICE : Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

WARNING

1. Operation of this receiver outside the cabinet or with the cover removed presents a shock hazard from the receiver power supplies. Work on the receiver should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high-voltage equipment.
2. Do not install, remove or handle the picture tube in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away while the picture tube is being handled. Keep the picture tube away from the body while handling.
3. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage area. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

X-RADIATION WARNING

The surface of the cathode ray tube may generate X-Radiation. Take precautions when servicing and, if possible, the use of a lead apron is recommended for shielding while handling.
When replacing the cathode ray tube, use only the designated replacement part since it is a critical component with regard to X-Radiation as noted on page 2. (No high-voltage adjustments are provided.) The high-voltage specifcation is described on the cover page.

LEAKAGE CURRENT CHECK

Before returning the receiver to the customer, it is recommended that leakage current be measured according to the following methods.

1. Cold Check
With the AC plug removed from the AC source, place a jumper across the two AC plug prongs. Turn the receiver AC switch on. Using an ohm-meter, connect one lead to the AC plug and touch the other lead to each exposed metal part (antennas, handle bracket, metal cabinet, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistance reading of 1 megohm. Any resistance below this value indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

2. Hot Check
Use the circuit in Fig. 1 to perform this test.
(1) With switch S1 open, connect the receiver to the measuring circuit. Immediately after connection, measure the leakage current using both positions of switch S2, and with the switching devices in the receiver in all of their operating positions.
(2) Switch S1 is then closed, energizing the receiver. Immediately after closing the switch, measure the leakage current using both positions of switch S2, and with the switching devices in the receiver in all of their operating positions. Current measurements of items (1) and (2) are to be repeated after the receiver has reached thermal stabilization.The leakage current must not be more than 0.5 miliampere.

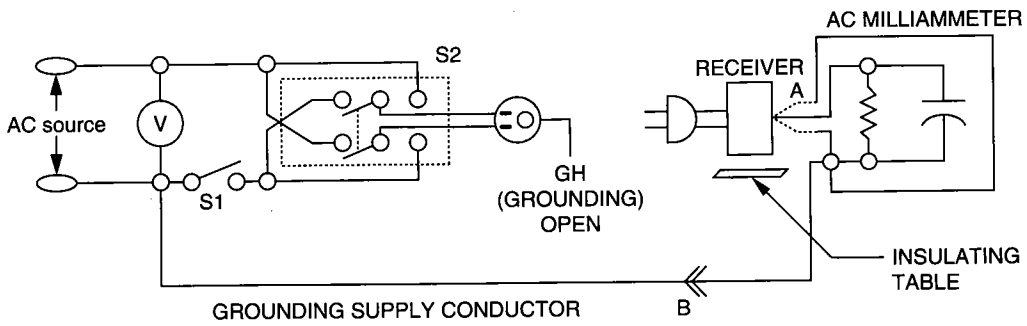


Fig. 1

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety related characteristics.
These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.
Replacement parts which have special safety characteristics are identified in this service manual.
Electrical components having such features are identified by shading on the schematic diagram and the parts list of this service manual, and by marking on the supplementary sheet for this chassis to be issued subsequently.
Therefore replacements for any safety party parts should be identical in value and characteristics.

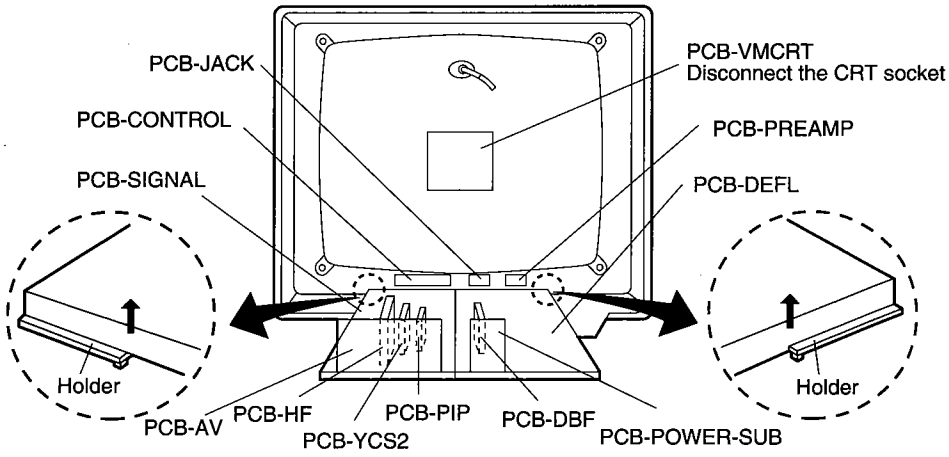
DISASSEMBLY

Removal of Back Cover

1. Remove the Top Board.
2. Remove 4 screws retaining the Rear Terminal Panel.
3. Remove 10 screws retaining the Back Cover.

Removal of PCBs

1. Pull out the Chassis Assembly while lifting the rear of the chassis slightly to release the 2 Holders. (Fig. 2)



Chassis Assembly including PCB-SIGNAL, PCB-DEFL, PCB-HF, PCB-YCS2, PCB-PIP, PCB-DBF, PCB-AV and PCB-POWER-SUB

Fig. 2

Extension Cord Jig Table

Part No.	Printed Circuit Board	Connector
859C431O20	PCB-PIP	GE (9 pin), GF (11 pin)
	PCB-AV	AA (11 pin), AB (15 pin), AV (13 pin)
	PCB-YCS2	EX (9 pin)
	PCB-HF	HB (11 pin), HC (15 pin)
	PCB-DBF	LB (5 pin)
859C431O60	PCB-DBF	DE(3 pin)

Removal of Connectors

The connectors connecting PCB-HF are more firmly secured than conventional ones.
The connectors cannot be easily removed just by pulling. To remove the connectors, follow the steps given below.

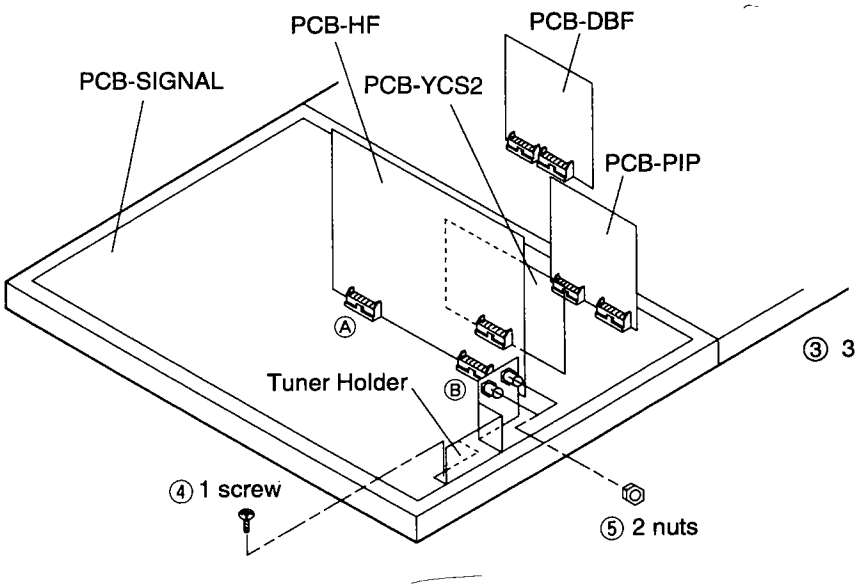


Fig. 3-1

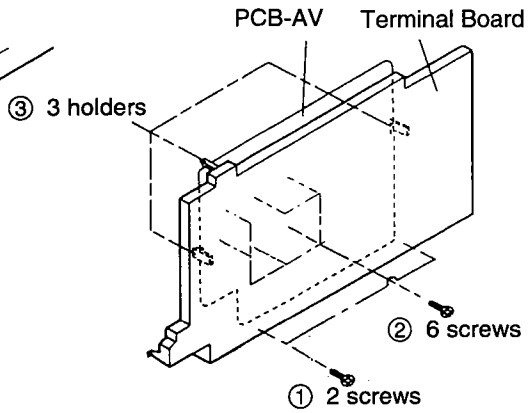


Fig. 3-2

Removal of PCB-HF

1. Remove the Top Board.
2. Remove the Back Cover.
3. Remove 2 screws ① and 6 screws ②. (Fig. 3-2.)
4. Detach 3 holders ③ and remove the Terminal Board from the PCB-AV. (Fig. 3-2.)
5. Remove the PCB-AV from the PCB-SIGNAL.
6. Remove 1 screw ④ and 2 nuts ⑤ and detach the Tuner Holder from the PCB-SIGNAL. (Fig. 3-1.)
7. Insert a narrow minus screwdriver in the top of connector assembly Ⓐ of the PCB-SIGNAL. Push the hook of the connector in direction ❶, as shown in Fig. 3-3. Raise the PCB-HF in the direction of ❷ to unhook the PCB-HF.
8. Insert the narrow minus screwdriver from the side into connector assembly Ⓑ of the PCB-SIGNAL. Push the hook of the connector in the direction ❶, as shown in Fig. 3-4. Raise the PCB-HF in the direction of ❷ to remove the PCB-HF from the PCB-SIGNAL.

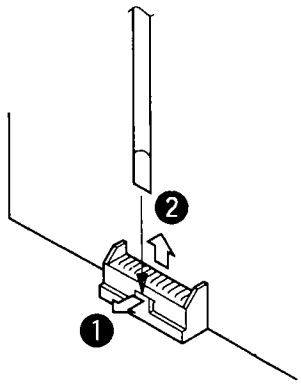


Fig. 3-3

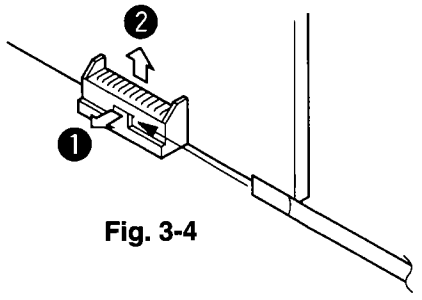


Fig. 3-4

Removal of PCB-PREAMP

1. Remove the Top Board.
2. Remove the Back Cover.
3. Carefully discharge the CRT to the ground on PCB-VMCRT.
4. Disconnect the Anode Cap from the CRT.
5. Remove the PCB-VMCRT and Chassis Assembly.
6. Remove the 2 screws retaining the PCB-PREAMP. (Fig. 4)

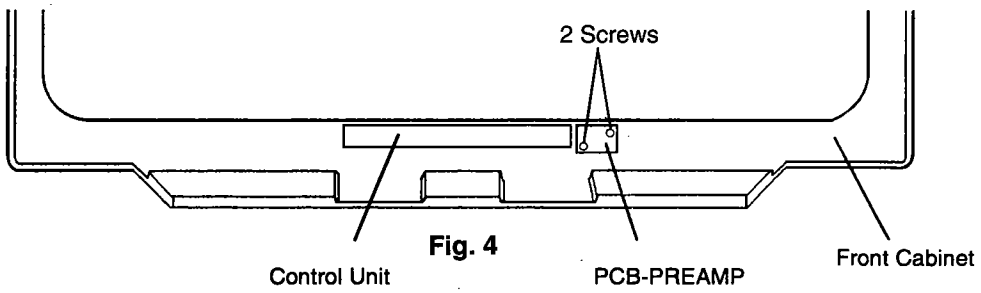


Fig. 4

Removal of PCB-CONTROL

1. Insert a thin shaft (Hex Key) into the holes on both the side of the Control Unit to remove the Control Unit from the Front Cabinet. (Fig. 5-1)
2. Turn the Control Unit upside down.
3. Remove the 1 screw ① and 4 holders ②. (Fig. 5-2)

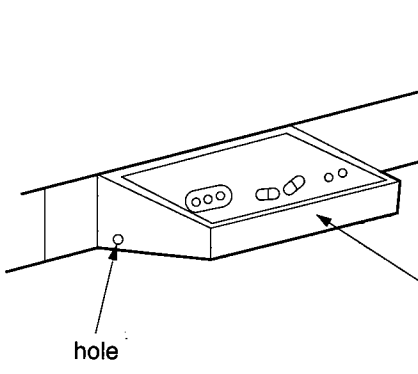


Fig. 5-1

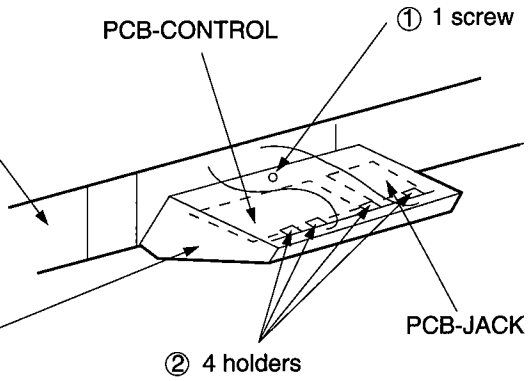


Fig. 5-2

LEAD DRESS

The Lead Wires to be clamped are listed in the table below.

NOTE: The inner wires are clamped so that they do not come close to the heat generating or high voltage parts. After servicing route all wires in their original position.

* The Anode Lead Wire is routed so that no tensile strength is applied to the cap. If the route of the Anode Lead Wire is changed, return it to the initial route shown below.
* Reverse printed characters indicates aerial clamp.

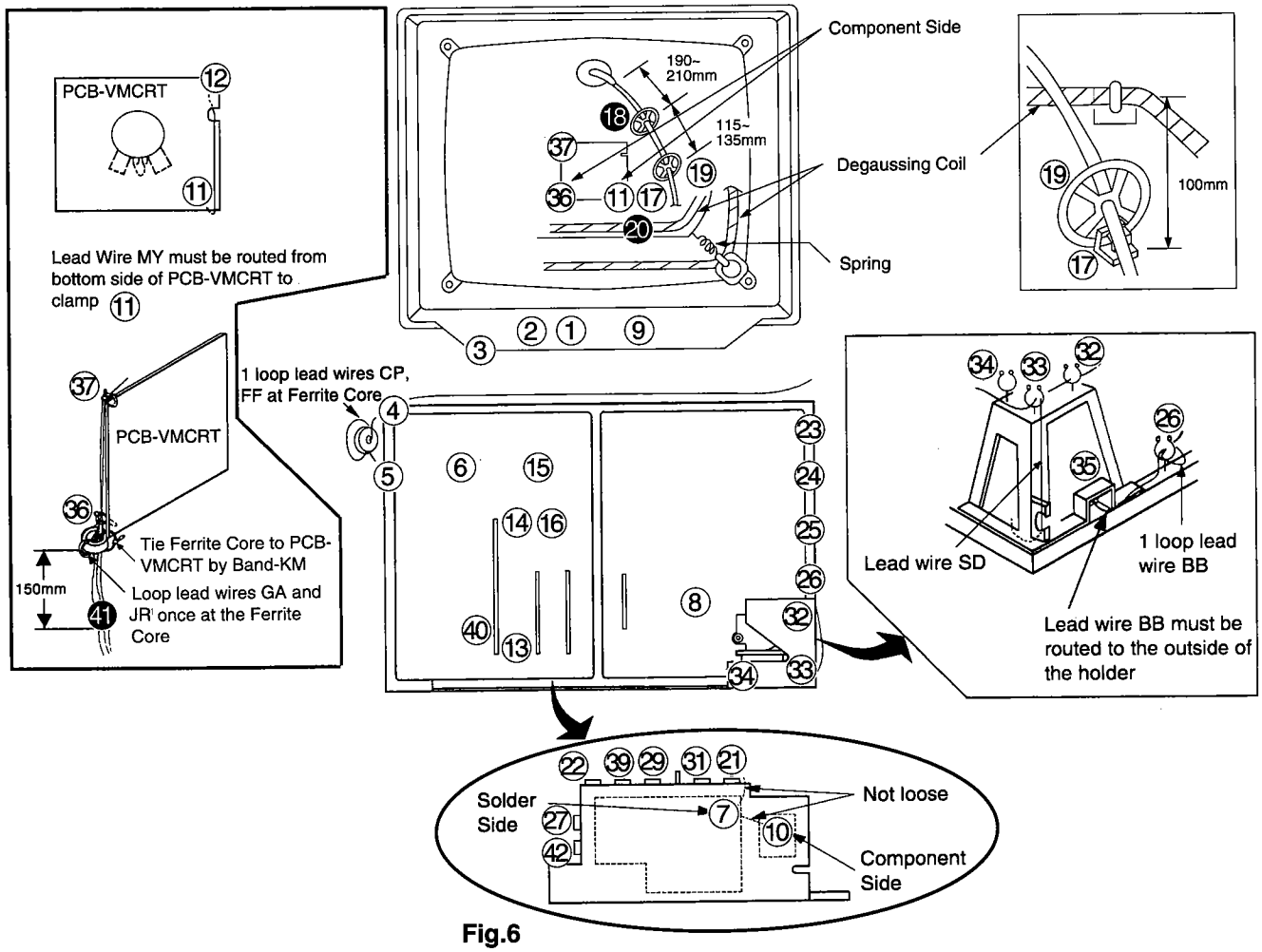

PCB-VMCRT
Lead Wire MY must be routed from bottom side of PCB-VMCRT to clamp
Component Side
190~ 210mm
115~ 135mm
Degaussing Coil
Spring
100mm
1 loop lead wires CP, FF at Ferrite Core
Tie Ferrite Core to PCB-VMCRT by Band-KM
150mm
Loop lead wires GA and JR once at the Ferrite Core
Lead wire SD
1 loop lead wire BB
Lead wire BB must be routed to the outside of the holder
Solder Side
Not loose
Component Side

Fig.6

LEAD WIRE	CLAMP
Anode Lead Wire	18-19
Screen Lead Wire	34-11
Spacer Ring	17
AC	6-14-13
AH	40
BB	25-26 (1 Loop) -35
BW	9
CA	11
CC	15-16
CE	1-2-3-4-6-14-13
CP	1-2-3-4-5
DC	20
DF	34
DR	23-24-25-26-32-33
DV	7
DY	8-10

LEAD WIRE	CLAMP
FF	1-2-3-4-5
FG	32-33-34-11
F1	34-11
F2	34-11
GA	16-41-36
HD	8-10-36-37
HP	7-11
JR	16-41-36
KC	1-2-3
KK	1-2-3-4-6-15
MY	11-12
PQ	8-10-34
SD	33-34-11
SL	4-6-14-13-39-22-27-42
SP	7
SR	3-4-6-14-13-39-22-27-42

CRT REPLACEMENT

GENERAL

In some instances, after CRT replacement, Purity and Convergence may require adjustment. If it is required, follow the procedure described in the alignment section of this manual.

CAUTION : Safety goggles must be worn at all times when handling the CRT.

CAUTION : The CRT is extremely sensitive to mechanical shock, therefore care must be taken at all times when handing the CRT.

CRT REPLACEMENT PROCEDURE

1. Remove the Back Cover as described under Removal of Back Cover.
2. Carefully discharge the CRT to the ground on PCB-VMCRT.
3. Disconnect the Anode Cap from the CRT.
4. Remove the PCB-VMCRT and Chassis Assembly (PCB-SIGNAL, PCB-DEFL, PCB-DBF, PCB-PIP, PCB-YCS2, PCB-HF, PCB-AV and PCB-POWER-SUB) as described in the Removal of PCBs.
5. Place a thick Cushion or Slab of foam rubber on the BASE and carefully lie the TV set on its face, taking care not to strike or scratch the face of the CRT. (Fig. 7-1)
6. Remove 4 screws retaining the CRT. (Fig. 7-1)
7. Remove the CRT from the Front Cabinet carefully. (Fig. 7-2, Fig. 7-3)
8. Remove the Degaussing Coil.
9. Remove the Grounding Wire.
10. To install the new CRT, reverse the above procedure.

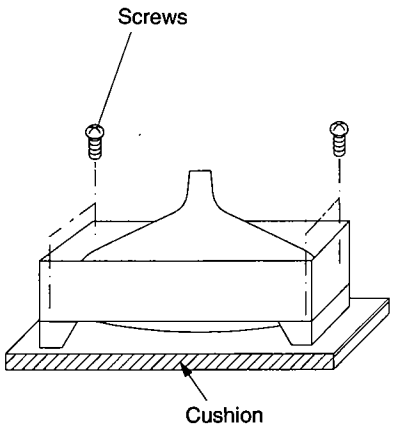


Fig.7-1

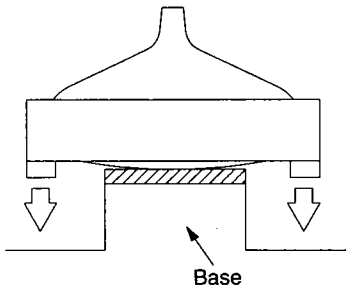


Fig.7-2

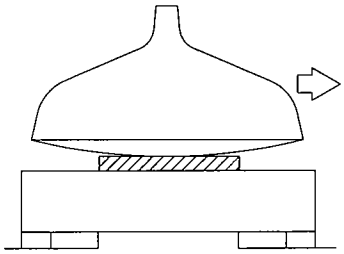


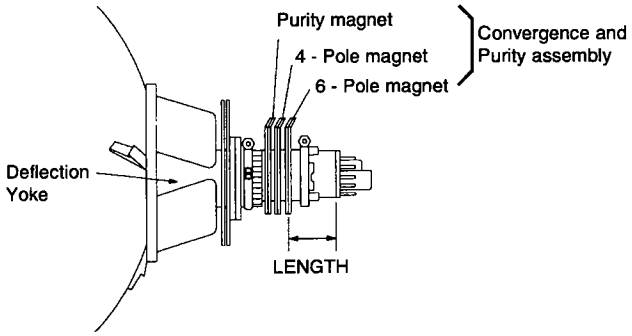
Fig.7-3

ITC ADJUSTMENTS

Before adjusting the INTEGRATED TUBE COMPONENT, run the CRT for more than an hour with a monochrome signal applied to provide normal beam current flow.

- ITC adjustments should be performed in the following sequence after replacing either the CRT, deflection yoke or purity and convergence magnetic assembly.
  When not replacing parts, perform only the necessary adjustments.
- Installation

a) Put the deflection yoke on the neck of the CRT, fully forward against cone.
b) Put the purity and convergence assembly on the neck of the CRT so that the distance between the 6-pole magnet and the base of the tube is as indicated in Table 1, and tighten screw the by hand.



LENGTH
2.28±0.04 inches (58.0±1.0mm)

Table 1

Preliminary Adjustment

a) Degauss front and rear of the CRT, CRT holder and the front and sides of the cabinet. Don't allow the degaussing coil near the deflection yoke, purity and convergence magnetic assembly.
   (Insufficient degaussing can prevent suitable color purity adjustment.)
b) Run the CRT for more than an hour with a white raster signal, to allow normal beam current.
c) Make sure that all electrical adjustments have been performed.
d) Set the magnetic strength to minimum.
   Then complete the six steps of 4-pole, 6-pole and purity magnets alignment.

1. Purity	**Adjustment purpose**	Insure the R, G and B beams hit the correct phosphors.
	Symptom when incorrectly adjusted	Color patches appear.

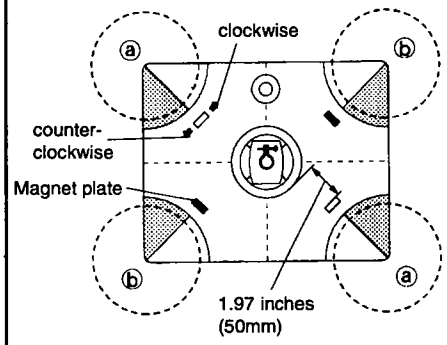
Input signal	VIDEO signal (white raster)
Input terminal	VIDEO IN terminal

Adjustment Item	Standard Value
BKR	01
BKG	01
BKB	01

1. Supply a VIDEO signal (white raster).
2. Set the TV to the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VCJ2".
4. Set the adjustment item to "BKB".
5. Set the adjustment data to "00" to change the color of the screen into yellow.
6. With the deflection yoke positioned fully forward, adjust the purity magnet so that the yellow bar is at the center of the screen with normal vertical centering.
7. Slide the deflection yoke slowly backwards to produce a uniform yellow raster.
8. Produce the primary color raster: red, green and blue, refer to steps 9, 10 and 11, and check that no contamination is observed in each color.
9. To produce a red raster, set the adjustment data of adjustment item "BKR" to the standard value and set the adjustment data of "BKG" and "BKB" to "00". Make sure that the purity of a red raster is optimum.
10. To produce a green raster, set the adjustment data of adjustment item "BKG" to the standard value and set the adjustment data of "BKR" and "BKB" to "00". Make sure that the purity of a green raster is optimum.
11. To produce a blue raster, set the adjustment data of adjustment item "BKB" to the standard value and set the adjustment data of "BKR" and "BKG" to "00". Make sure that the purity of a blue raster is optimum.
12. Tighten the deflection yoke in position.
13. Set the adjustment data of adjustment items "BKR", "BKG" and "BKB" to the standard values. (Press "ENTER" after setting data and before selecting the next adjustment item.)
14. Terminate the circuit adjustment mode, press the menu button twice.

2. Screen corner landing compensation	**Adjustment purpose**	Correct divergence in the corners of the screen.
	Symptom when incorrectly adjusted	Color edging appears at the corners of a screen.

Input signal	VIDEO signal (red raster)
Input terminal	VIDEO IN terminal

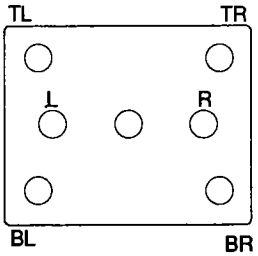


* The adjustments described below are for correcting inward color beam divergence at the corners of the screen.
Reverse placement of the magnet plate for correcting outward divergence.

1. Degauss the unit with its own degaussing system.
   Do not use any degaussing coil other than the built-in degaussing coil since an external coil may fail degaussing and worse, may magnetize the TV.
2. Supply a VIDEO signal (red raster).
3. Make sure that no other color than red appears at the corners of the screen.
   If another color appears, attach the magnet plate (Up to 3 pieces at a position) on the funnel of the CRT so that the undesirable color disappears (Part No. of magnet: 461D033O20).
   1).When an undesirable color appears at area ⓐ, shown in the figure, set the face of magnet plate to the white marker side and attach the magnet plate to the funnel of the CRT.
   2).When an undesirable color appears at area ⓑ shown in the figure, set the magnet plate to the opposite side of white marker, and attach tha magnet plate to the funnel of the CRT.

Note: The magnet plate will distort raster and disturb the convergence system. Do not place a magnet plate closer than 1.97inches (50mm) to the bobbin of the deflection yoke.

4. If an undesirable color appears at the area shown ▨, move the magnet plate counter-clockwise until the color disappears.
   If an undesirable color appears at the area shown □, move the magnet plate clockwise until the color disappears.



Check point for landing

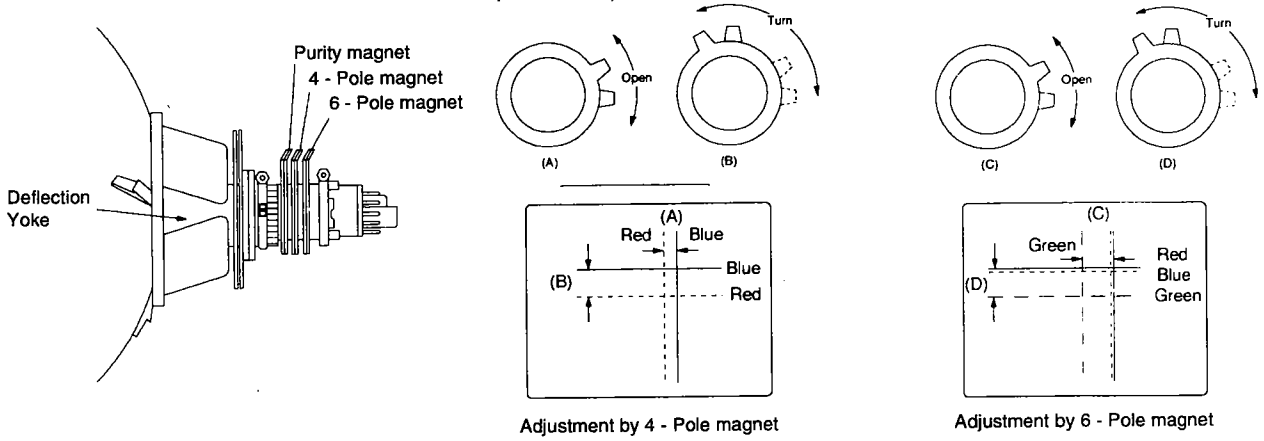
Check point	Best landing	Outward divergence	Inward divergence
R.TR.BR			
L.TL.BL			

5. After correction, degauss the set and then check corners of the screen.
   If discoloration exists, fine adjust the magnet plate for that corner.

3. Static convergence	**Adjustment purpose**	To correct any misconvergence in the center of the picture.
	Symptom when incorrectly adjusted	Color edging of objects in the main picture area.

Input signal	VIDEO signal (crosshatch)
Input terminal	VIDEO IN terminal

1. Supply a VIDEO signal (crosshatch).
2. Set the BRIGHTNESS and CONTRAST controls to center position.
3. Adjust the angle between the tabs of the 4-pole magnet and the angular position to converge the "B" and "R" beams on the screen.
4. Adjust the angle between the tabs of the 6-pole magnet and the angular position to converge the "B" and "R" beams to the "G" beam at the center of the screen.
5. Make sure that purity in each color "R", "G" and "B" is maintained. If necessary, repeat item 1 (Purity) , item 2 (Screen corner landing compensation) and Item 3 (Static Convergence).



Adjustment by 4 - Pole magnet

Adjustment by 6 - Pole magnet

Note: With both 4-pole and 6-pole magnets, converge the vertical line with the angle between tabs and the horizontal line by angular rotation of both tabs together.

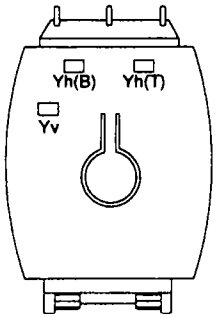
4. Yh correct	**Adjustment purpose**	Correct the color divergence of R, G and B vertical lines at the top and bottom of the picture.
	Symptom when incorrectly adjusted	Color edging of vertical lines at the top and bottom of the picture.

Input signal	VIDEO signal (crosshatch)
Input terminal	VIDEO IN terminal

* Before adjusting, be sure to tighten the deflection yoke in position.
1. Supply a VIDEO signal (crosshatch).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VCJ2".
4. Set the adjustment item to "BKG".
5. Set the adjustment data to "00".
6. When color beams do not converge at the upper and lower portions of the Y axis, as shown at the left side of the figure below, turn the adjusting potentiometer, Yh(T), clockwise and then turn the potentiometer Yh(B) counter-clockwise until the beams converge at the top and bottom.

* Note that the potentiometer Yh (T) affects the beams at upper portion of the screen while the Yh (B) at lower portion.

* Reverse counter-clockwise and clockwise when the beam diverging directions are opposite to the example shown below.

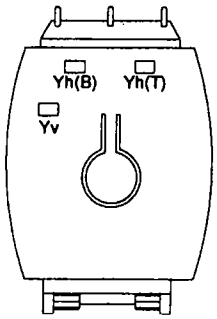


	Direction of divergence	Adjusting potentiometers, Yh(T) and Yh(B)
Yh	R B	Red beam moves clockwise / Red beam moves counter-clockwise

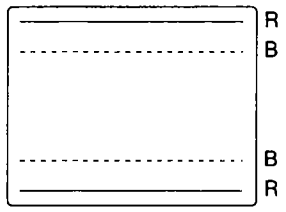
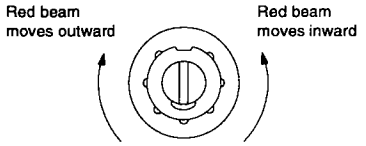
7. Reset the adjustment data to"01".
8. Terminate the circuit adjustment mode. (Press "MENU" twice)

5. Yv correct	**Adjustment purpose**	Correct color divergence of R, G and B horizontal lines at the top and bottom of the picture.
	Symptom when incorrectly adjusted	Color edging around horizontal lines at the top and bottom of the picture.

Input signal	VIDEO signal (crosshatch)
Input terminal	VIDEO IN terminal



* Before adjusting, be sure to tighten the deflection yoke in position.
1. Supply a VIDEO signal (crosshatch).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VCJ2".
4. Set the adjustment item to "BKG".
5. Set the adjustment data to "00".
6. When lines do not converge at the upper and lower portion of the screen, turn the adjusting potentiometer, Yv, clockwise.
   Rotate counter-clockwise when the beam diverging directions are opposite to the example shown below.

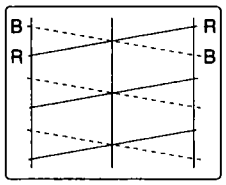
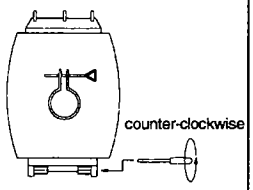
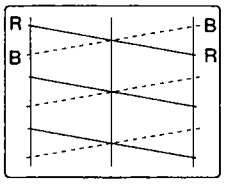
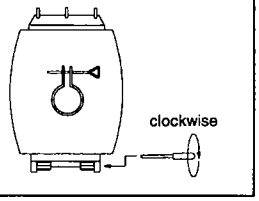
	Direction of divergence	**Adjusting potentiometers**
Yv		

7. Reset the adjustment data to"01".
8. Terminate the circuit adjustment mode. (Press "MENU" twice)

6. Xv correct	**Adjustment purpose**	Correct color divergence of R, G and B horizontal lines at the sides of the picture.
	Symptom when incorrectly adjusted	Color edging around horizontal lines at the sides of the picture.

Input signal	VIDEO signal (crosshatch)
Input terminal	VIDEO IN terminal

* Before adjusting, be sure to tighten the deflection yoke in position.
1. Supply a VIDEO signal (crosshatch).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VCJ2".
4. Set the adjustment item to "BKG".
5. Set the adjustment data to "00".

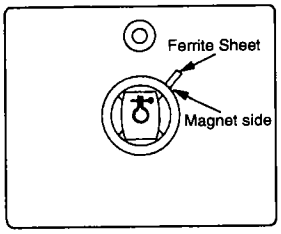
Type of Misconvergence	Core position
	
	

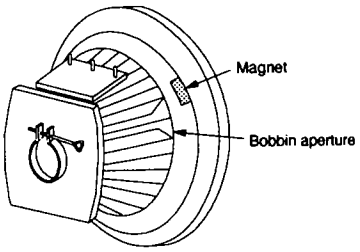
6. When beam lines do not converge at left and right portion of the screen, adjust vertical cross (Xv) with the horizontal differential coil as shown above.
7. Reset the adjustment data to"01".
8. Terminate the circuit adjustment mode. (Press "MENU" twice)

7. Convergence of screen corner	**Adjustment purpose**	Correct convergence at the corners of the picture.
	Symptom when incorrectly adjusted	Color edging in the corners.

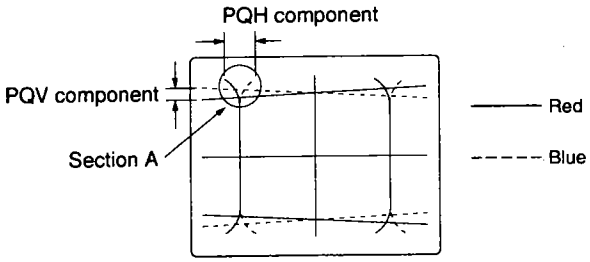
Input signal	VIDEO signal (crosshatch)
Input terminal	VIDEO IN terminal

1. Supply a VIDEO signal (crosshatch).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VCJ2".
4. Set the adjustment item to "BKG".
5. Set the adjustment data to "00".
6. If convergence is poor at the corners, place a magnet at the aperture of the deflection yoke bobbin, as shown in the figure, so that PQH (Pin cushion quality H) and PQV (Pin cushion quality V) components are minimized.
   To correct the A section of the screen, place a magnet (Part No. 461D017O10) and Ferrite sheet (Part No. 479D002O10) in the position shown in the figure below.





Magnet mounting position
(Rear view of deflection yoke)



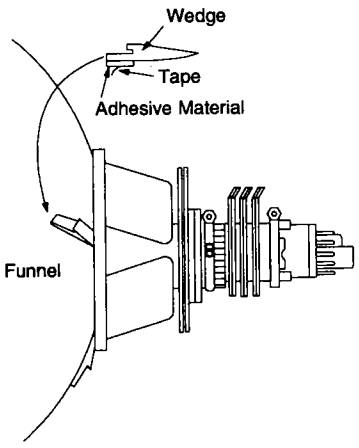
(Misconversion pattern)

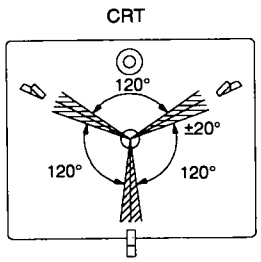
7. Reset the adjustment data to"01".
8. Terminate the circuit adjustment mode. (Press "MENU" twice)

8. Wedges position	**Adjustment purpose**	Fix the deflection yoke to the funnel of the CRT.
	Symptom when incorrectly adjusted	Convergence diverges.

Input signal	- - -
Input terminal	- - -

1. Insert 3 wedges so there is no yoke movement, as shown below.
2. After positioning the wedges, gently turn up the end of the wedge and strip the tape from the rear of the end to expose the adhesive material, then adhere to the funnel of the CRT.
3. Apply silicone gum (Part No. 859D106O20) between wedges and the funnel of the CRT.





Note: Do not use a wedge that has already been used.

ELECTRICAL ADJUSTMENTS

Perform only the alignments required.
If proper equipment is not available, do not attempt an alignment.

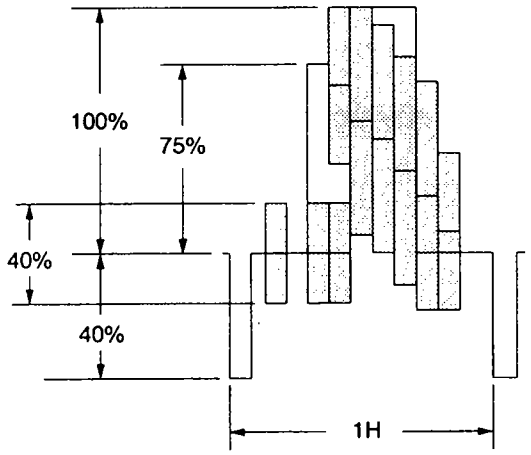
□ Measuring equipment and Jigs

- Oscilloscope (Unless otherwise specified in particular, use 10:1 probes)
- Signal generator
- Frequency counter
- Direct current voltmeter
- Sweep generator
- Direct current power supply
- Multiplex audio signal generator
- Direct current milliammeter
- Electrical tools
- Cable extension kit (Part No. 859C431O20)

□ Test signal

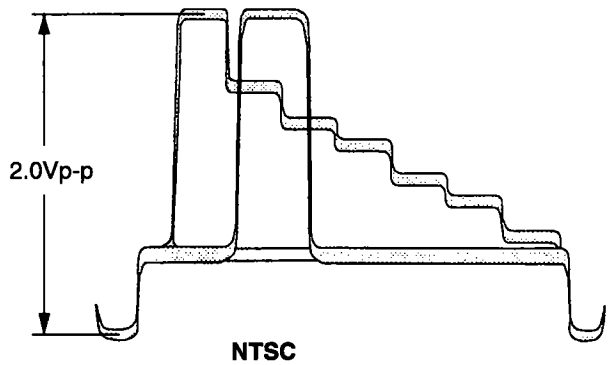
(1) Monoscope signal
When you have no monoscope signal source for adjustment, connect the unit to a VCR and play an alignment tape (Monoscope).

(2) Color bar signal
In this manual, unless otherwise specified , use the color bar signal specified below.



NTSC
Split-Field Color Bars (with 100% window)

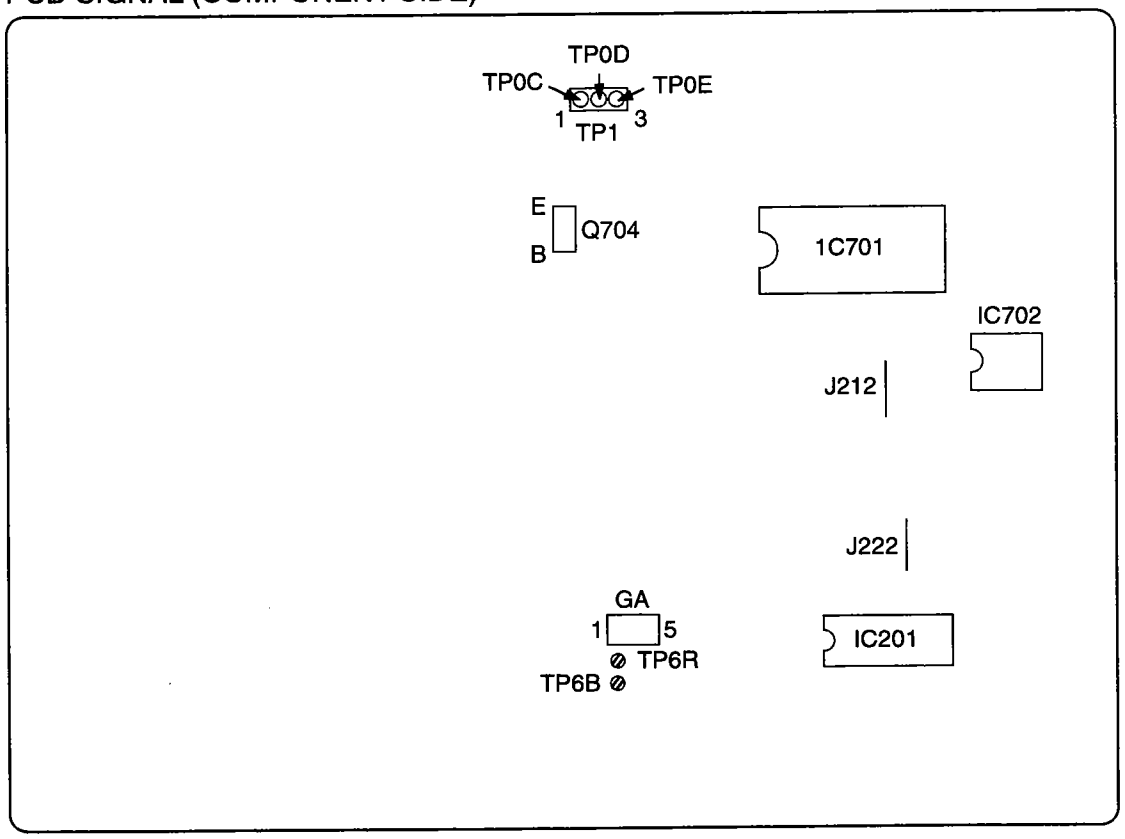
(3) Use the following signal for the adjustment of Item 24 (Sub CONT).
Signal: EIA color bar ..... Chroma off
2.0Vp-p (at no-load)
Sync chip-0.6Vp-p
Set up-0%.



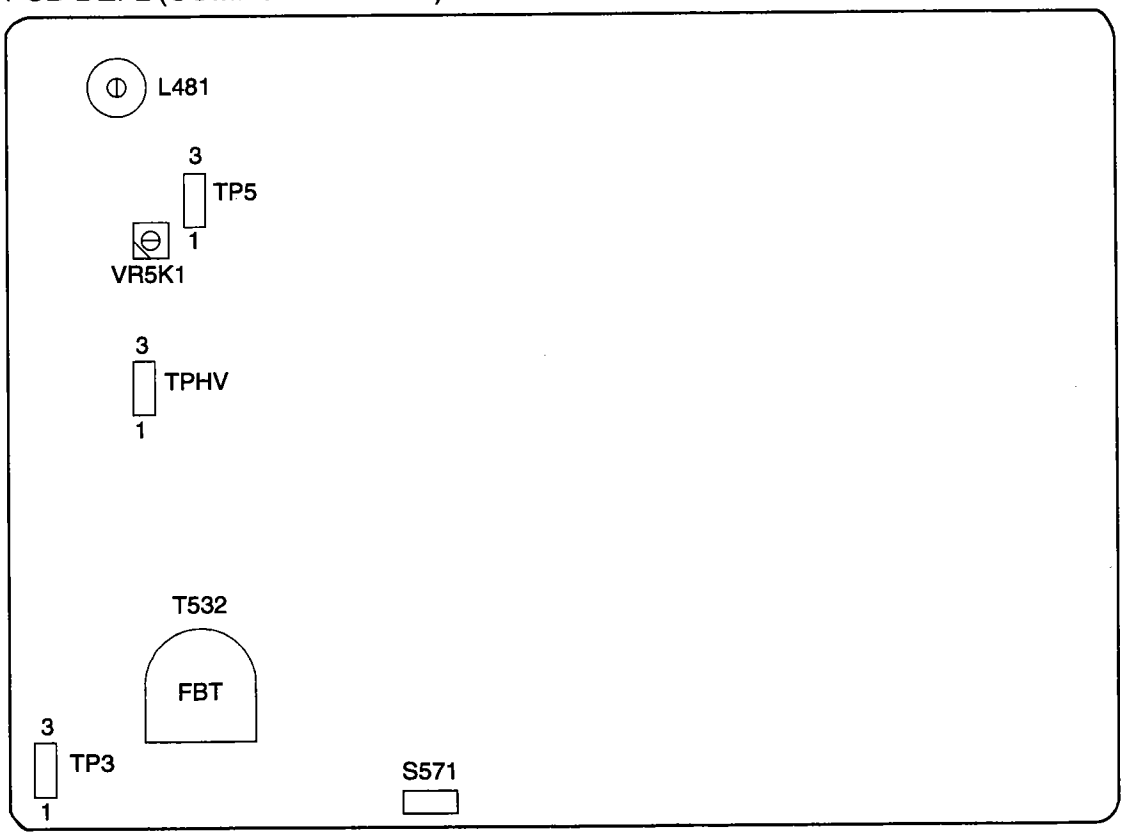
NTSC
EIA Color Bars (Chroma OFF)

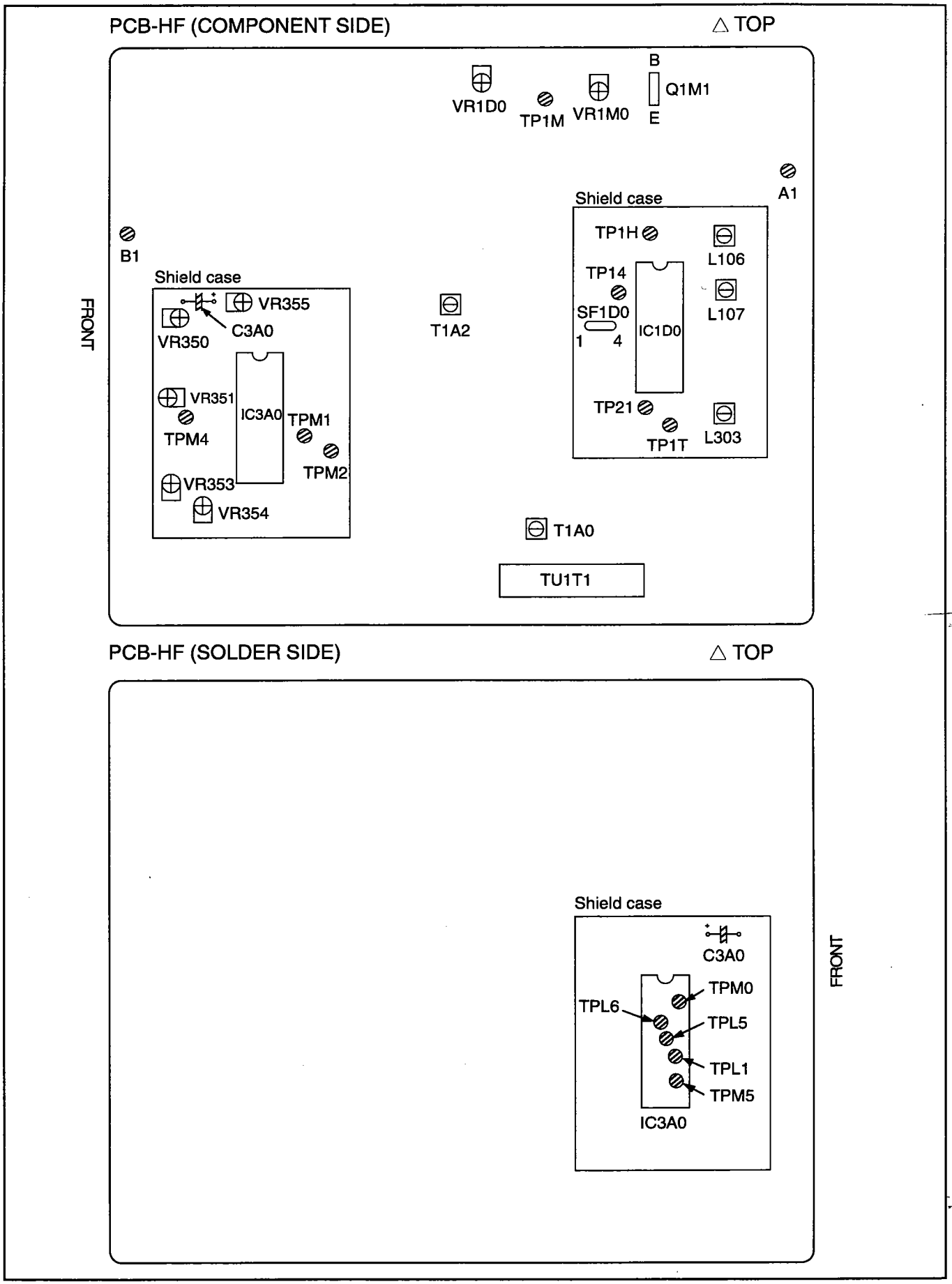
Location of Test Points and Adjustments

PCB-SIGNAL (COMPONENT SIDE)

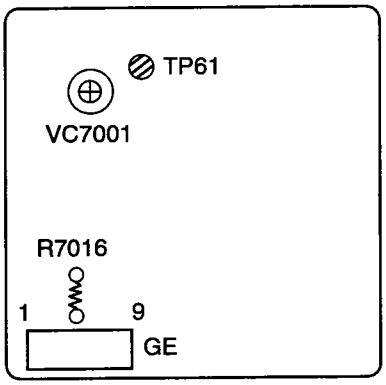


PCB-DEFL (COMPONENT SIDE)

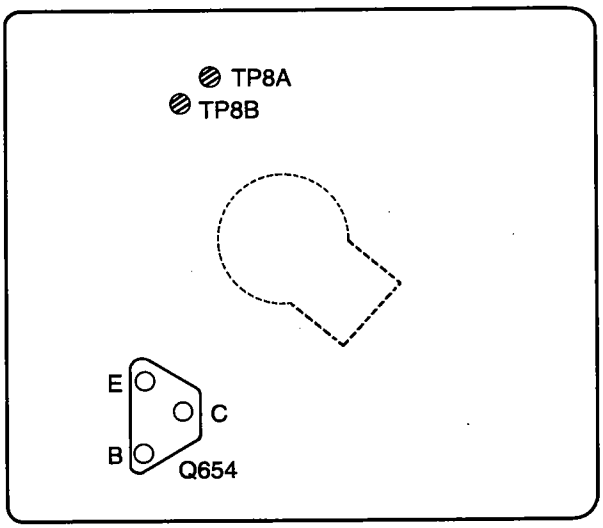



PCB-HF (COMPONENT SIDE)
△ TOP
VR1D0
TP1M
VR1M0
B
Q1M1
E
A1
Shield case
TP1H
L106
TP14
SF1D0
1
4
IC1D0
L107
TP21
TP1T
L303
B1
Shield case
VR355
C3A0
VR350
T1A2
VR351
IC3A0
TPM1
TPM4
TPM2
VR353
VR354
T1A0
TU1T1
FRONT
PCB-HF (SOLDER SIDE)
△ TOP
Shield case
C3A0
TPM0
TPL6
TPL5
TPL1
TPM5
IC3A0
FRONT

PCB-PIP (COMPONENT SIDE)



PCB-CRT (SOLDER SIDE) △ TOP



Initial Set Up

Follow the steps below for the initial set up.

1. Set the receiver to "TV mode".
2. Press the "MENU" button on a remote hand unit one time to select the "MENU" display.
3. Press the buttons "1", "3", "7" and "0" in sequence to select the "OPTION MENU" display.
4. Press the "ADJUST" button to select "Initial".
5. Press the "ENTER".

Note: At this time, channel 3 is automatically selected.

6. Repeat steps 2 and 3 above to display the "OPTION MENU" screen.
7. Use the "ADJUST" button and the "ENTER" to set "OPTION MENU" as shown in the table below.
8. Press the "MENU" button twice to return to normal viewing.

OPTION MENU

Initial		3Dia	: On
E2RESET		CCD	: On
Hotel	: Off	Auto clock	: On
Power res	: Off		
Antenna	: 2		
Input	: 3		
When mute	: On		

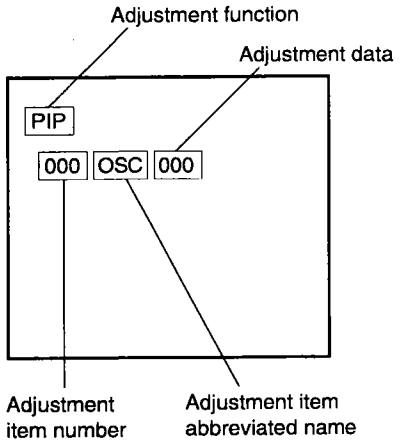
CAUTION: DO NOT select "E2RESET" and press "QV" button.
If pressed, all the data of E²PROM is changed to the initial data value, then readjustment of all the data relating to the E²PROM must be performed.

Circuit Adjustment Mode

On this model, the following adjustment items may only be performed using the remote hand unit.

* Item 11 (white level) ~ Item 13 (Color output)
* Item 15 (Horizontal width, Vertical height, linearity) ~ Item 20 (Horizontal position)
* Item 22 (Vertical position)
* Item 24 (Sub CONT) ~ Item 25 (Character position)
* Item 27 (PIP chroma gain) ~ Item 28 (PIP Sub TINT)

To perform these adjustments, use the following procedure to activate the circuit adjustment mode.



1. Activating the circuit adjustment mode

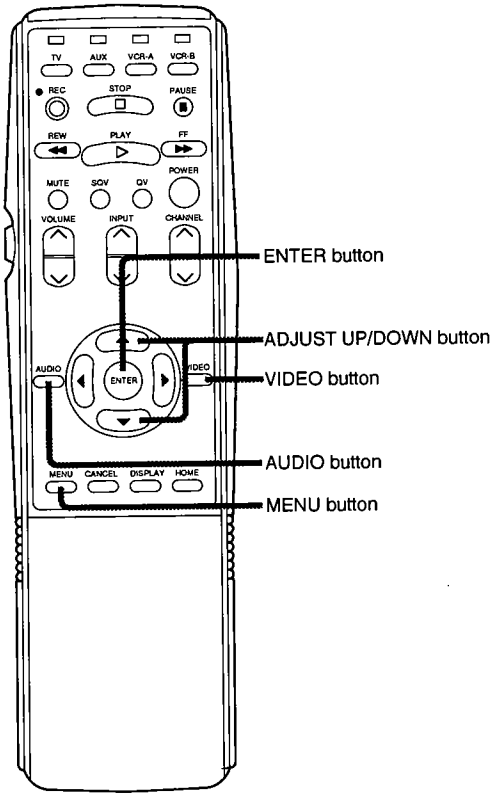
(1) Press the "MENU" button on a remote hand unit. (The "MENU" display will appear.)
(2) Press the buttons "2", "3", "5" and "7" in that order. (The screen will change to the circuit adjustment mode.)
If it has not changed to the circuit adjustment mode, repeat steps (1) and (2) again.

2. Selection of adjustment functions and adjustment items

To select an adjustment item in the circuit adjustment mode, select first the adjustment function, that includes the specific adjustment item to be selected, and next select the adjustment item.
Refer to the following pages for the listing of adjustment functions and adjustment items.

(1) Press the "AUDIO" button on a remote hand unit to select an adjustment function. Each time the button is pressed, the adjustment function changes in the following sequence.

(2) Press the "VIDEO" button to select a specific adjustment item. The adjustment item number increases, each time the "VIDEO" button is pressed.



3. Changing Data

After selecting an adjustment item, use the "ADJUST UP/DOWN" button to change adjustment value.
*If "ADJUST DOWN" button is pressed, the adjustment data decreases.
*If "ADJUST UP" button is pressed, the adjustment data increases.

4. Saving of adjustment data

Press "ENTER" to save the adjustment data in memory. The display of characters goes red for approx. two seconds in this step.

NOTE: If the circuit adjustment mode is terminated without pressing "ENTER" ,changes in adjustment dataare not saved.

5. Terminating the circuit adjustment mode

Press the "MENU" button on the remote hand unit twice to terminate the circuit adjustment mode.

Note: The circuit adjustment mode can be also terminated by turning the power OFF.

List of Adjustment Functions and Adjustment Items

Note: The values with the description of "Fixed Value" in the NOTE column should not be changed.
Note: The "initial data" is the initial value of that adjustment. The initial data may not be correct for the normal performance of your specific TV set.
Note: The E²PROM stores the adjustment data. When replaced, the micro computer will automatically write the initial data values in the new E²PROM. Initial data with an * mark will differ from that given in the table.
After replacing E²PROM, or when selecting E2RESET in OPTION MENU, readjust the data with * marks to the values listed below.
Note: When ICs for specific adjustment functions are replaced, the micro computers automatically writes the data value stored in the E²PROM.

Function Display		VCJ2			IC201
Adjustment Item	Adjustment Item Abbreviated Name	Adjustment Name	Changeable Range	Initial Data	Note
0	DL1	DL Aperture Control 1	0~3	00	Fixed value
1	DL2	DL Aperture Control 2	0~3	*02	
2	YDL	DL Time Adj	0~3	*01	Fixed value
3	SHP	Sharpness	0~63	10	
4	CNT	Contrast Cont	0~127	45	
5	NRL	NR Corring Level	0~7	04	Fixed value
6	COL	Color Cont	0~127	55	
7	TNT	TINT Cont	0~127	65	
8	HPH	AFC Horizontal Phase	0~15	04	
9	GMA	γ-position	0~7	04	
10	BRT	Brightness Cont	0~127	48	
11	DMR	DRIVE (R)	0~63	32	
12	DMB	DRIVE (B)	0~63	32	
13	CTR	CUT OFF (R)	0~127	127	
14	CTG	CUT OFF (G)	0~127	127	
15	CTB	CUT OFF (B)	0~127	127	
16	BKR	BLK Select (R)	0~1	01	Fixed value
17	BKG	BLK Select (G)	0~1	01	Fixed value
18	BKB	BLK Select (B)	0~1	01	Fixed value
19	FLS	Flesh Cont on/off	1	01	Fixed value
20	DEM	Demodulation Axis	1	01	Fixed value
21	SVS	Service SW	0~1	01	
22	AFC	AFC1 Speed Changeover	0~1	01	
23	PED	Auto Pedestal on/off	0~1	00	Fixed value
24	YNR	YNR on/off	0~1	01	
25	DHR	Color Temperature High DRIVE (R)	0~63	32	
26	DHB	Color Temperature High DRIVE (B)	0~63	32	
27	DLR	Color Temperature Low DRIVE (R)	0~63	32	
28	DLB	Color Temperature Low DRIVE (B)	0~63	32	

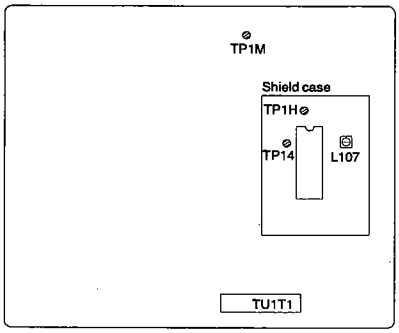
Function Display		VDRV			IC501
Adjustment Item	Adjustment Item Abbreviated Name	Adjustment Name	Changeable Range	Initial Data	Note
0	VHT	V-Height	0~63	28	
1	VLR	V-Linearity	0~31	25	
2	VSC	V-S Correction	0~31	06	
3	VSF	V-Shift	0~7	04	Fixed value
4	VCM	V-Compensation	0~15	11	
5	HWD	H-Width	0~63	32	
6	PAM	E-W Parabola (PCC-AMP)	0~63	25	
7	PCN	E-W Corner (PCC Corner)	0~15	13	
8	PPH	Trapezoidal PCC-Phase	0~63	20	
9	HCM	H-Compensation	0~15	13	
10	VSS	V-S Correction	0~15	11	
11	VPO	V-Position	0~2	01	

Function Display		PIP			IC7002
Adjustment Item	Adjustment Item Abbreviated Name	Adjustment Name	Changeable Range	Initial Data	Note
0	TINT	Tint	0~63	22	
1	COLR	Color Saturation	0~63	19	
2	DECD	Color Reset	0~1	0	Fixed value
3	SYNC	Sub Picture Sync Separation Threshold	0~7	* 1	Fixed value
4	RVS	RVS	0~1	0	Fixed value
5	BG-Y	Background Luminance Level	0~15	8	Fixed value
6	BSTB	Burst with Background displayed	0~63	*24	Fixed value
7	MVW	Sub Picture Macro Vision	0~3	* 3	Fixed value
8	CRTN	Sub Picture Tint Offset	0~3	1	Fixed value
9	VXA	Sub Picture Vertical Position	91~255	110	Fixed value
10	HXAO	Sub Picture Horizontal Position	17~139	131	Fixed value
11	ADJ9	DelayVolumebetweenSubPictureandFrame(1/9)	0~15	* 4	Fixed value
12	YDL9	Sub Picture Y Delay Volume (1/9)	8~29	*16	Fixed value
13	HPX9	Writing System Horizontal Position (1/9)	0~255	*44	Fixed value
14	VYA9	Sub Picture Height (1/9)	0~255	188	Fixed value
15	HYA9	Sub Picture Width (1/9)	6~255	58	Fixed value
16	ADJ6	DelayVolumebetweenSubPictureandFrame(1/16)	0~15	* 4	Fixed value
17	YDL6	Sub Picture Y Delay Volume (1/16)	8~29	16	Fixed value
18	HPH6	Writing System Horizontal Position (1/16)	0~255	98	Fixed value
19	VYA6	Sub Picture Height (1/16)	0~255	206	Fixed value
20	HYA6	Sub Picture Width (1/16)	6~255	44	Fixed value
21	VXAM	Sub Picture Vertical Position (Multi)	207~255	228	Fixed value
22	HXAM	Sub Picture Horizontal Position (Multi)	15~150	32	Fixed value
23	VXBM	Sub Picture Vertical Position (Multi)	200~239	239	Fixed value

[IF Circuit] 1. VCO Free run frequency	**Adjustment purpose**	Setting VCO free run frequency to the picture IF frequency.
	Symptom when incorrectly adjusted	Impossible to tune channels properly.

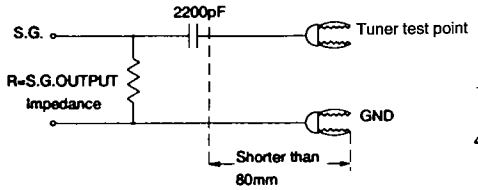
Measuring instrument	Oscilloscope
Test point	TP1M
EXT trigger	---
Measurement range	DIV 20mV TIM 2ms
Input signal	sweep signal (90±2dBμ/load)
Input terminal	Tuner test point

PCB-HF (COMPONENT SIDE)

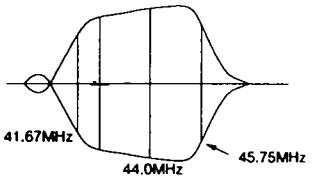


* Preheat the set for two minutes or more.

1. Remove the ANTENNA cable from RF IN terminal.
2. Select VHF-High band (CH11).
3. Connect TP1H to the ground via an electrolytic capacitor (22μF, 35V or more).
4. Connect a sweep generator to the tuner test point via the jig, as shown below. (Use the shield case of tuner unit for the ground.)
5. Connect a DC Power supply to TP14.
6. Adjust the voltage of TP14 so that the amplitude of the waveform on the oscilloscope is 1.2Vp-p.
7. Adjust L107 so that the zero beat point is aligned with 45.75MHz marker on the oscilloscope.



JIG



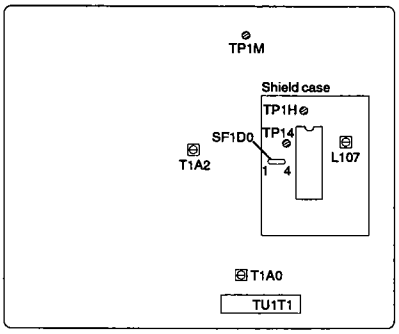
WAVEFORM

8. Remove the Power supply from TP14 and connect TP14 to the ground.
9. Remove the electrolytic capacitor from TP1H and the ground.
10. Measure the voltage on TP1H.
11. Open the short circuit between TP14 and ground.
12. Set the output of a generator to 45.75MHz sine wave.
13. Adjust L107 so that the voltage reading on TP1H is the same within ±30mV to the reading measured in step 10.

[IF Circuit] 2. VIF Overall response	**Adjustment purpose**	Frequency characteristics of VIF detection circuit.
	Symptom when incorrectly adjusted	Too sharp or too soft picture.

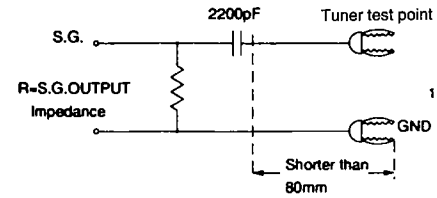
Measuring instrument	Oscilloscope
Test point	TP1M
EXT trigger	---
Measurement range	DIV 20mV TIM 2ms
Input signal	sweep signal (90±2dBμ/load)
Input terminal	Tuner test point

PCB-HF (COMPONENT SIDE)

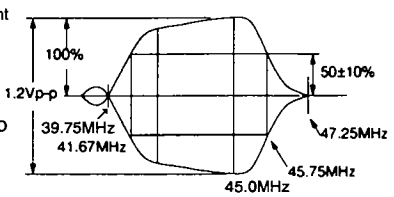


* This adjustment must follow Item 1 (VCO Free run frequency).

1. Remove the ANTENNA cable from RF IN terminal.
2. Select VHF-High band (CH11).
3. Connect a ceramic capacitor (2200pF, 50V) across pins 1 and 4 of SF1D0.
4. Connect TP1H to the ground via an electrolytic capacitor (22μF, 35V or more).
5. Connect a sweep generator to the tuner test point via the jig, as shown below. (Use the shield case of tuner unit for the ground.)
6. Connect a DC Power supply to TP14.
7. Observe the waveform at TP1M.
8. Adjust the voltage of TP14 so that the amplitude of the waveform on the oscilloscope is 1.2Vp-p.
9. Adjust T1A0 to tune the trap frequency to 47.25MHz.
10. Adjust T1A2 to tune the trap frequency to 39.75MHz.
11. Remove the ceramic capacitor from pins 1 and 4 of SF1D0.
12. Adjust the IF coil in the tuner unit so that the amplitude at 41.67MHz and 45.75MHz are almost the same as shown below.



JIG



WAVEFORM

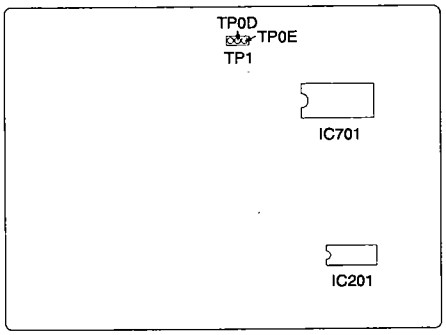
[IF Circuit] 3. RF AGC	**Adjustment purpose**	Setting RF AGC to optimum point for RF reception.
	Symptom when incorrectly adjusted	Poor S/N ratio or cross modulation.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	RF signal (standard broadcast)
Input terminal	RF IN terminal

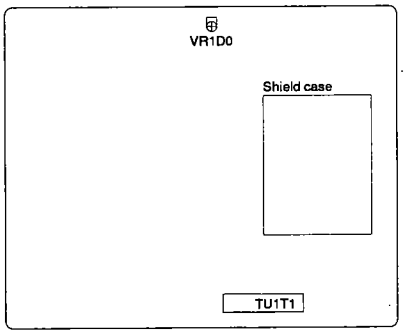
* This adjustment should be done when there is cross modulation or the picture tears horizontally.
* This adjustment must follow Item 1 (VCO Free run frequency).
1. Supply an RF signal (standard broadcast).
2. Short circuit TP0E and TP0D. (DISPLAYS MFT)
3. Adjust VR1D0 until the symptom disappears.
4. Open short-circuit between TP0E and TP0D.

Note: Adjustment Item 4 (AFT) must be performed immediately after this adjustment.

PCB-SIGNAL (COMPONENT SIDE)



PCB-HF (COMPONENT SIDE)



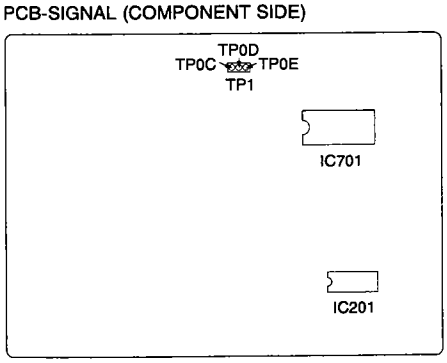
[IF Circuit] 4. AFT	**Adjustment purpose**	Align AFT circuit.
	Symptom when incorrectly adjusted	Channel(s) detuned.

Measuring instrument	DC voltmeter
Test point	TP0C
EXT trigger	---
Measurement range	---
Input signal	RF signal (color bar 70~80dBμ)
Input terminal	RF IN terminal

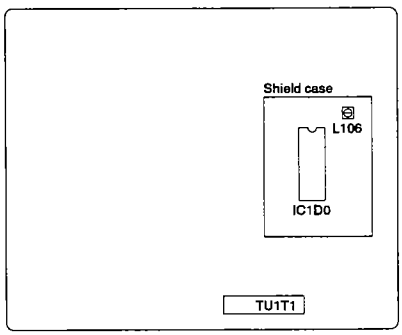
* This adjustment must follow Item 3 (RF AGC).
1. Supply an RF signal (color bar 70~80dBμ).
2. Set the receiver to TV mode.
3. Short-circuit TP0E and TP0D. (DISPLAYS MFT)
4. Observe the DC voltage at TP0C.
5. Adjust L106 so that the DC voltmeter reads 2.8±0.1VDC.
6. Open short-circuit between TP0E and TP0D.

Note: Adjustment Item 5 (Video level) must be performed immediately after this adjustment.

PCB-SIGNAL (COMPONENT SIDE)



PCB-HF (COMPONENT SIDE)



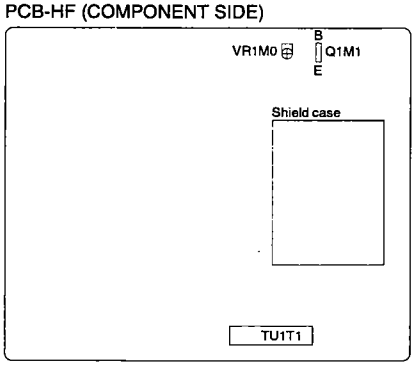
[IF Circuit] 5. Video level	**Adjustment purpose**	Setting tuner video level.
	Symptom when incorrectly adjusted	Too bright or too dark picture when receiving broadcast programs.

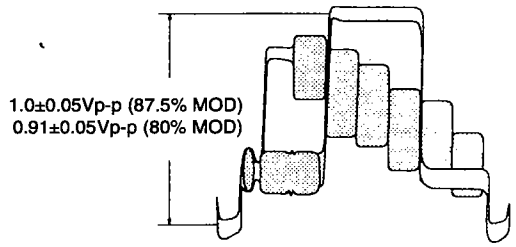
Measuring instrument	Oscilloscope
Test point	Emitter of Q1M1
EXT trigger	---
Measurement range	DIV 20mV TIM 10µs
Input signal	RF signal (color bar)
Input terminal	RF IN terminal

* This adjustment must follow Item 4 (AFT).

1. Supply an RF signal (color bar).
2. Observe the waveform at the emitter of Q1M1.
3. Adjust VR1M0 so that the amplitude of the waveform is 1.0±0.05Vp-p(87.5%MOD) or 0.91±0.05Vp-p (80.0%MOD).

PCB-HF (COMPONENT SIDE)





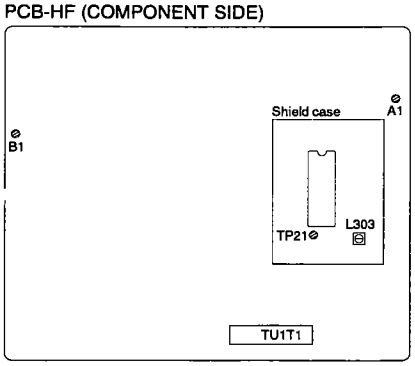
WAVEFORM

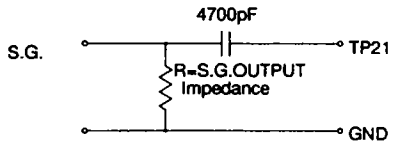
[Multi Channel Sound Circuit] 6. FM Multiplex audio detect	**Adjustment purpose**	To obtain OPTIMUM demodulation of the FM signal.
	Symptom when incorrectly adjusted	Distorted sound or no SAP detection.

Measuring instrument	DC voltmeter
Test point	TP20 (A1 or B1)
EXT trigger	---
Measurement range	---
Input signal	Sine wave signal (4.5MHz,90dBµ)
Input terminal	TP21

1. Connect a signal generator (0%MOD) to TP21 using a high pass filter, as shown below.
2. Observe the DC voltage at TP20 (A1 or B1).
3. Adjust L303 so that a DC voltmeter reads 4.5±0.1VDC.

PCB-HF (COMPONENT SIDE)



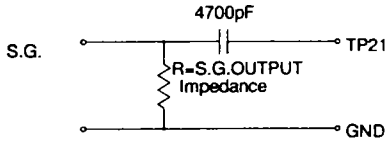


High pass filter

[Multi Channel Sound Circuit] 7. Composite level	**Adjustment purpose**	Setting the input level of the audio detection signal to normal.
	Symptom when incorrectly adjusted	Varying output level or malfunction of STEREO mode display.

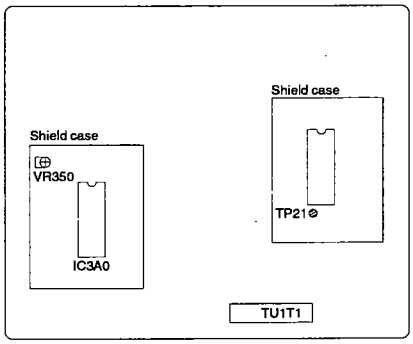
Measuring instrument	Oscilloscope
Test point	TPM0
EXT trigger	---
Measurement range	DIV 20mV TIM 1ms
Input signal	FM signal (4.5MHz,90dBμ)
Input terminal	TP21

1. Supply an FM modulated signal (400Hz, 100%MOD) to TP21 using a high pass filter, as shown below.
2. Observe the waveform at TPM0.
3. Adjust VR350 so that the amplitude of the waveform on the oscilloscope is 850±20mVp-p.

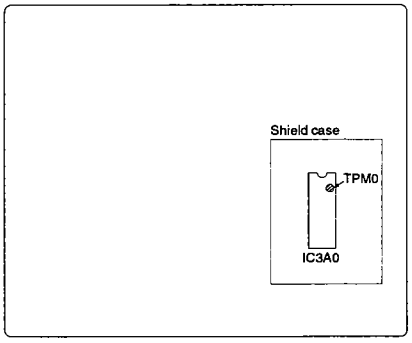


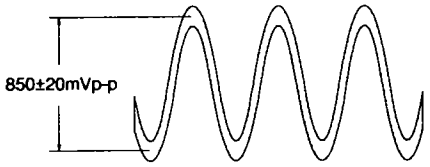
High pass filter

PCB-HF (COMPONENT SIDE)



PCB-HF (SOLDER SIDE)





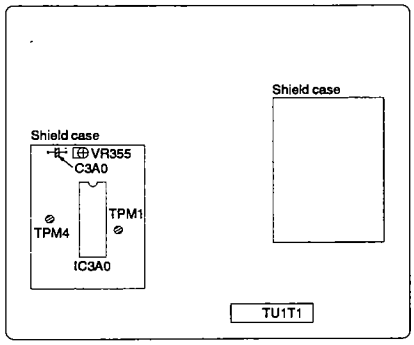
WAVEFORM

[Multi Channel Sound Circuit] 8. Stereo VCO	**Adjustment purpose**	Set the reference frequency for the multiplex IC oscillator.
	Symptom when incorrectly adjusted	No STEREO mode detection.

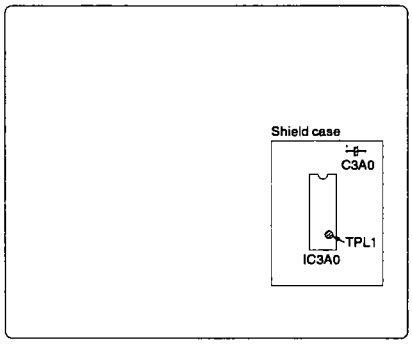
Measuring instrument	Frequency counter
Test point	TPM1
EXT trigger	---
Measurement range	---
Input signal	---
Input terminal	---

1. Connect TPL1 (pin 10 of IC3A0) to TPM4 (pin 12 of IC3A0) via a resistor (100kΩ 1/4W).
2. Connect the (+) lead of C3A0 to ground via an electrolytic capacitor (2200μF, 16V or more).
3. Observe the frequency at TPM1.
4. Adjust VR355 for 15.73±0.05kHz reading on the frequency counter.
5. Remove the resistor from TPL1 and TPM4, and remove the electrolytic capacitor from C3A0.

PCB-HF (COMPONENT SIDE)



PCB-HF (SOLDER SIDE)

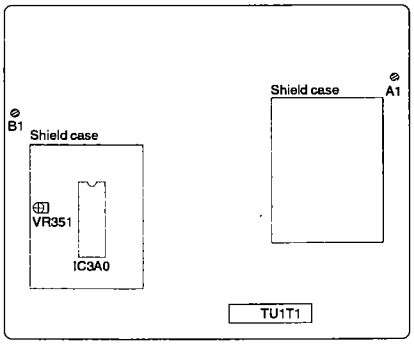


[Multi Channel Sound Circuit] 9. Filter	**Adjustment purpose**	Filter for pilot signal.
	Symptom when incorrectly adjusted	Poor S/N ratio in the STEREO or SAP mode.

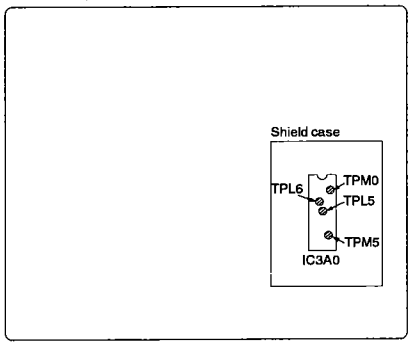
Measuring instrument	Oscilloscope
Test point	TPM5 (pin 17 of IC301)
EXT trigger	---
Measurement range	DIV 10mV TIM 50µs
Input signal	Sine wave signal (15.73kHz,100mVrms)
Input terminal	TPM0

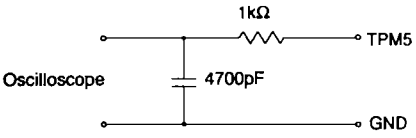
1. Connect TP20 (A1 or B1) to ground via an electrolytic capacitor (1000µF, 16V or more).
2. Short-circuit TPL5 and TPL6.
3. Set the signal generator output to 15.73kHz, 100mVrms sine wave and connect to TPM0 via an electrolytic capacitor (10µF, 50V or more) as shown below.
4. Observe the waveform at TPM5 using a low pass filter as shown below.
5. Adjust VR351 so that the amplitude of the waveform on the oscilloscope is minimum.
6. Remove the electrolytic capacitor from TP20 (A1 or B1) and the ground.
7. Open short-circuit between TPL5 and TPL6.

PCB-HF (COMPONENT SIDE)

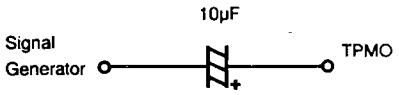


PCB-HF (SOLDER SIDE)





Low pass filter



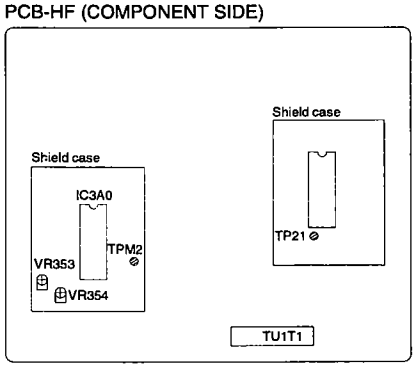
Electrolytic capacitor

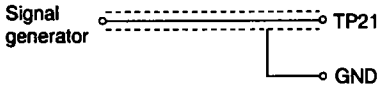
[Multi Channel Sound Circuit] 10. Separation and Spectral	**Adjustment purpose**	Adjust right and left separation.
	Symptom when incorrectly adjusted	Poor or no stereo separation.

Measuring instrument	Oscilloscope
Test point	TPM2
EXT trigger	---
Measurement range	DIV 10mV TIM 2ms
Input signal	RF signal (multiplex audio)
Input terminal	TP21

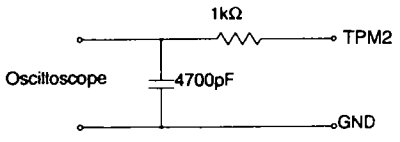
1. Set a multiplex audio signal generator to L-CH only, NR ON, PILOT ON, SAP OUT OFF, TELEMETRY OUT OFF with modulation at 300Hz, -11dBm.
2. Set an RF modulator to MONO, NR OFF, PILOT OFF, SAP OUT OFF, TELEMETRY OUT OFF, and set to AUDIO mode with 25kHz deviation.
3. Set the output level of the RF modulator to 0dBm.
4. Observe the waveform at TPM2 using a low pass filter, as shown below.
5. Adjust VR353 for minimum amplitude of the 300Hz waveform.
6. Change the modulating signal from 300Hz to 3kHz.
7. Adjust VR354 for minimum amplitude of the 3kHz waveform.
8. Repeat the above steps once more.

PCB-HF (COMPONENT SIDE)





Coaxial cable

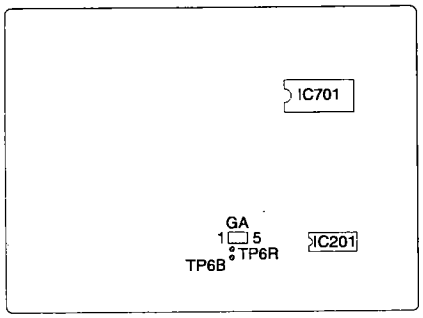


Low pass filter

[Chroma Circuit] 11. White level	**Adjustment purpose**	To set the white level of the picture.
	Symptom when incorrectly adjusted	Too bright or too dark white areas of the picture.

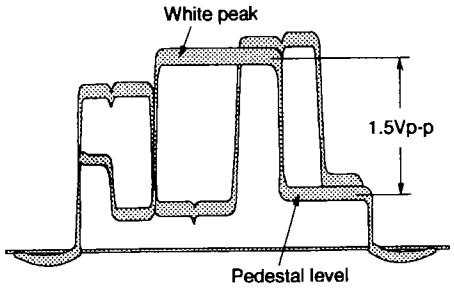
Measuring instrument	Oscilloscope
Test point	TP6R (pin 2 of connector GA)
EXT trigger	---
Measurement range	DIV 0.1V TIM 10μs
Input signal	VIDEO signal (color bar)
Input terminal	VIDEO IN terminal

PCB-SIGNAL (COMPONENT SIDE)



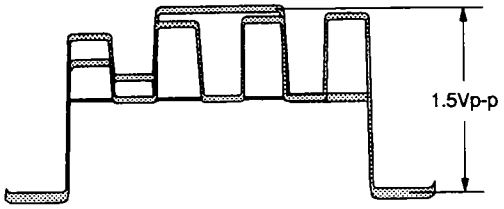
1. Supply a VIDEO signal (color bar).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to VCJ2. ("AUDIO" button)
4. Set the adjustment data of the adjustment items "DMR", "DMB", "CTR", "CTG" and "CTB" to the initial data. ("ADJUST" button - press "ENTER" after each setting)
5. Set the adjustment item to "GMA" (γ-Position). ("VIDEO" button)
6. Set the adjustment data to "07". ("ADJUST" button)
7. Connect an oscilloscope to TP6R.
8. Set the adjustment item to "CNT" (Contrast). ("VIDEO" button)
9. Set the adjustment data so that the waveform on the oscilloscope matches waveform (A) below. ("ADJUST" button)

Adjusment item	Initial data
DMR	32
DMB	32
CTR	127
CTG	127
CTB	127



Waveform (A)

10. Connect an oscilloscope to TP6B.
11. Set the adjustment item to "DHB" (B-DRIVE). ("VIDEO" button)
12. Set the adjustment data so that the waveform on the oscilloscope matches waveform (B) below. ("ADJUST" button)



Waveform (B)

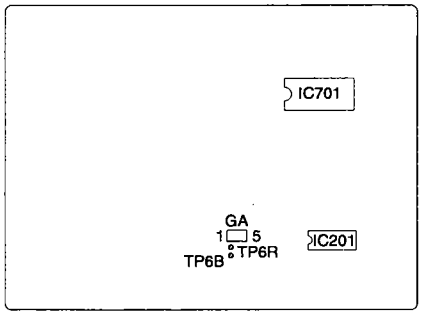
13. Set the adjustment item to "GMA" (γ-Position). ("VIDEO" button)
14. Set the adjustment data to "04". ("ADJUST" button)
15. Write the adjustment data. (Press "ENTER")
16. Terminate the circuit adjustment mode. (Press "MENU" twice)

Note: Adjustment Item 12 (Vector) must be performed immediately after this adjustment.

[Chroma Circuit] 12. Vector	**Adjustment purpose**	To produce correct hues.
	Symptom when incorrectly adjusted	Incorrect color hues.

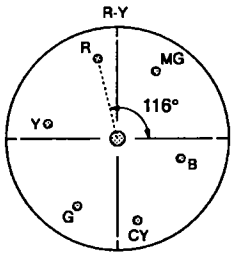
Measuring instrument	Oscilloscope
Test point	CH-1: TP6B CH-2: TP6R
EXT trigger	---
Measurement range	DIV 0.1V X-Y mode
Input signal	VIDEO signal (color bar, Y signal OFF)
Input terminal	VIDEO IN terminal

PCB-SIGNAL (COMPONENT SIDE)



* This adjustment must follow Item 11 (White level).
1. Supply a VIDEO signal (color bar, Y signal OFF).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VCJ2". ("AUDIO" button)
4. Set the data of adjustment items "DMR", "DMB", "CTR", "CTG" and "CTB" to the initial data. ("ADJUST" button - press "ENTER" after each setting)
5. Set the adjustment item to "GMA" (γ-Position). ("VIDEO" button)
6. Set the adjustment data to "07". ("ADJUST" button)
7. Observe the waveform at TP6B and TP6R (CH-1 to TP6B).
8. Set the adjustment item to "TNT" (TINT). ("VIDEO" button)
9. Set the adjustment data so that the luminance point denoting red in the vector waveform is placed at 116 degrees. ("ADJUST" button)
10. Set the adjustment item to "GMA" (γ-Position). ("VIDEO" button)
11. Set the adjustment data to "04". ("ADJUST" button)
12. Write the adjustment data. (Press "ENTER")
13. Terminate the circuit adjustment mode. (Press "MENU" twice)

Note: Adjustment Item 13 (Color output) must be performed immediately after this adjustment.

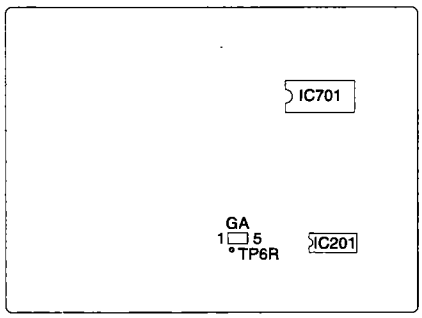


Vector waveform

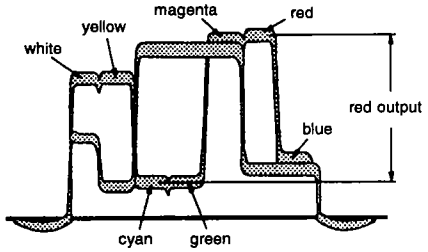
[Chroma Circuit] 13. Color output	**Adjustment purpose**	Color level of picture.
	Symptom when incorrectly adjusted	Excess or insufficient color.

Measuring instrument	Oscilloscope
Test point	TP6R
EXT trigger	---
Measurement range	DIV 50mV TIM 10μs
Input signal	VIDEO signal (color bar)
Input terminal	VIDEO IN terminal

PCB-SIGNAL (COMPONENT SIDE)



* This adjustment must follow Item 12 (Vector).
1. Supply a VIDEO signal (color bar).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VCJ2". ("AUDIO" button)
4. Set the data of adjustment items "DMR", "DMB", "CTR", "CTG", and "CTB" to the initial data. ("ADJUST" button - press "ENTER" after each setting)
5. Set the adjustment item to "GMA" (γ-Position). ("VIDEO" button)
6. Set the adjustment data to "07". ("ADJUST" button)
7. Set an oscilloscope to the normal mode and observe TP6R.
8. Set the adjustment item to "COL" (COLOR CONT). ("VIDEO" button)
9. Set the adjustment data so that the amplitude of the red output voltage waveform is 1.80±0.05Vp-p. (The data set must be equal or approximate to the initial data.) ("ADJUST" button)
10. Set the adjustment item to "GMA" (γ-Position). ("VIDEO" button)
11. Set the adjustment data to "04". ("ADJUST" button)
12. Write the adjustment data. (Press "ENTER")
13. Terminate the circuit adjustment mode. (Press "MENU" twice)



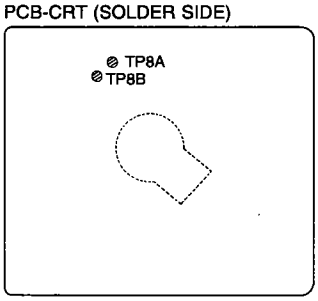
Waveform

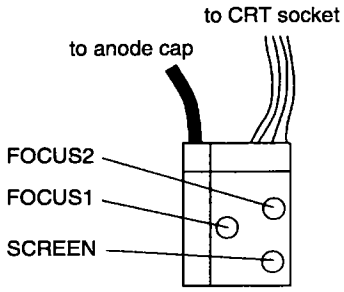
[CRT Circuit] 14. Focus	**Adjustment purpose**	Sharpness of the picture.
	Symptom when incorrectly adjusted	Poor sharpness of the picture.

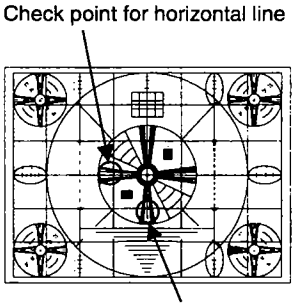
Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (monoscope)
Input terminal	VIDEO IN terminal

1. Supply a VIDEO signal (monoscope).
2. Short-circuit TP8A and TP8B.
3. Observe the vertical lines, adjust FOCUS-2 control for best focus.
4. Observe the horizontal lines, adjust FOCUS-1 control for best focus.
5. Repeat step 2 and 3 three times or more until no further improvement is seen.
6. Open short-circuit between TP8A and TP8B.

PCB-CRT (SOLDER SIDE)







Monoscope Signal

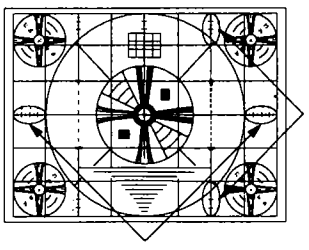
[Deflection Circuit] 15. Horizontal width, Vertical height, linearity	**Adjustment purpose**	Horizontal and vertical balance of picture.
	Symptom when incorrectly adjusted	Horizontally or vertically compressed or expanded picture.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (monoscope)
Input terminal	VIDEO IN terminal

* This adjustment must follow Item 14 (Focus).

1. Supply a VIDEO signal (monoscope).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VDRV". ("AUDIO" button)
4. Set the adjustment item to "HWD" (Horizontal width). ("VIDEO" button)
5. Set the adjustment data so that the sum of the horizontal width markers is 7.0. ("ADJUST" button, then press "ENTER")
6. Set the adjustment item to "VLR" (Vertical linearity). ("VIDEO" button)
7. Set the adjustment data so vertical linearty is optimum. ("ADJUST" button, then press "ENTER")
8. Set the adjustment item to "VHT" (Vertical height). ("VIDEO" button)
9. Set the adjustment data so that the sum of the vertical height markers is 4.0. ("ADJUST" button)
10. Write the adjustment data. (Press "ENTER" after each adjustment)
11. Terminate the circuit adjustment mode. (Press "MENU" twice)

Note: Adjustment Item 16 (Side PCC) must be performed immediately after this adjustment.



Monoscope Signal

[Deflection Circuit] 16. Side PCC	**Adjustment purpose**	Minimize side pincushion distortion.
	Symptom when incorrectly adjusted	Horizontal distortion of picture.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (crosshatch)
Input terminal	VIDEO IN terminal

* This adjustment must follow Item 15 (Horizontal width, Vertical height, linearity).

1. Supply a VIDEO signal (crosshatch).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VDRV". ("VIDEO" button)
4. Set the adjustment item to "PAM" (PCC-AMP). ("VIDEO" button)
5. Set the adjustment data so that the side raster distortion is minimum.
6. Set the adjustment item to "PPH" (PCC-Phase). ("VIDEO" button)
7. Set the adjustment data so that the side raster distortion is minimum.
8. Write the adjustment data. (Press "ENTER" after each adjustment)
9. Terminate the circuit adjustment mode. (Press "MENU" twice)

Note: Alternately repeat steps 4 and 7 to make side raster distortion minimum.

Note: If the side raster distortion is large in the middle, set the adjustment item to "PCN" and set the adjustment data so the distortion is not noticeable.

Note: Adjustment Item 17 (CRT bias, Cut off) must be performed immediately after this adjustment.

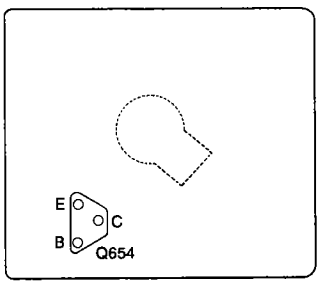
[CRT Circuit] 17. CRT bias, Cut off	**Adjustment purpose**	To set the cut off level of the three electron beams.
	Symptom when incorrectly adjusted	Monochrome has a color tint.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (monoscope)
Input terminal	VIDEO IN terminal

* This adjustment must follow Item 16 (Side PCC).

1. Supply a VIDEO signal (monoscope).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VCJ2". ("AUDIO" button)
4. Set the data of the adjustment items "CNT", "BRT", "DHR", "DHB", "DLR" and "DLB" to the initial data. ("VIDEO", "ADJUST" and "ENTER" buttons)
5. Set the adjustment item to "GMA" (γ-Position). ("VIDEO" button)
6. Set the adjustment data to "07". ("ADJUST" button)
7. Set the adjustment item to "APL" (APL Circuit Connection Amount). ("VIDEO" button)
8. Set the adjustment data to "06". ("ADJUST" button)

PCB-CRT (SOLDER SIDE)



Adjusment item	Initial data
CNT	45
BRT	48
DHR	32
DHB	32
DLR	32
DLB	32

Continued on next page

9. Set the adjustment item to "SVS" (Single Horizontal Line Switchover). ("VIDEO" button)
10. Set the adjustment data to "00". (The screen will be changed to display a single horizontal line.) ("ADJUST" button)
11. Set the SCREEN VR on Flyback Transformer (T532) to the point where one red, green, or blue line just becomes visible.
12. Set the adjustment data to "01". (The screen will return to the normal display.) ("ADJUST" button)
13. Decrease the value for the adjustment items "CTR", "CTG" and "CTB" for the colors not visible on the screen when displaying the single horizontal line in step 11 above, to set the horizontal line color to white. ("VIDEO", "ADJUST" and "ENTER" buttons)

Note: The screen displays the single white line for a certain amount of time after the adjustment data is modified. (While adjusting the screen goes to a single horizontal line.)

Note: CUT OFF data of the color visible on the screen displaying the single line in step 11 must not be changed.

14. Set the adjustment item to "GMA" (γ-Position). ("VIDEO" button)
15. Set the adjustment data to "04" ("ADJUST" button)
16. Write the adjustment data. (Press "ENTER")
17. Terminate the circuit adjustment mode. (Press "MENU" twice)

Note: Adjustment Item 18 (Black level) must be performed immediately after this adjustment.

[Video Circuit]
18. Black level

Adjustment purpose Picture luminance.

Symptom when incorrectly adjusted Too bright or too dark a picture.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (monoscope)
Input terminal	VIDEO IN terminal

* This adjustment must follow Item 17 (CRT bias, Cut off).

1. Supply a VIDEO signal (monoscope).
2. Activate the circuit adjustment mode. (refer to page 17).
3. Set the adjustment function to "VCJ2". ("AUDIO" button)
4. Set the data of the adjustment items "DHR", "DHB", "DLR" and "DLB" to the initial data. ("VIDEO", "ADJUST" and "ENTER" buttons)
5. Set the adjustment item to "BRT" (BRIGHT CONT). ("VIDEO" button)
6. Observe a gradation signal inside a monoscope signal, and set the adjustment data so that the levels of 10% and 0% areas of the gradation signal shown below in the figure are equal (Black level 10%). ("ADJUST" button)

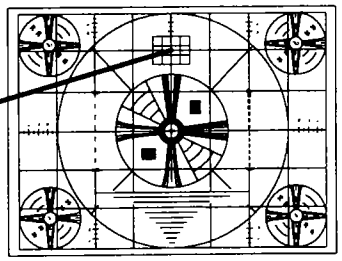
Note: When setting the black level to 10%, the adjustment data of adjustment item "BRT" must not vary more than ±2 from the value set in Item 17 (CRT bias, Cut off). Adjust the black level with the "BRT" data after readjusting the screen VR.

7. Write the adjustment data. (Press "ENTER")
8. Terminate the circuit adjustment mode. (Press "MENU" twice)

Note: Adjustment Item 19 (White balance) must be performed immediately after this adjustment.

gradation signal

40%	30%	20%	10%
50%	0%	0%	0%
60%	70%	80%	90%



Monoscope signal

[CRT Circuit] 19. White balance	**Adjustment purpose**	The best white balance of picture.
	Symptom when incorrectly adjusted	Monochrome picture has a color tint.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (white raster)
Input terminal	VIDEO IN terminal

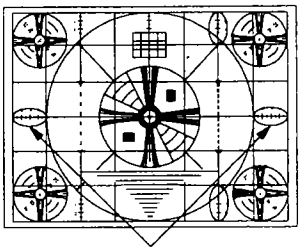
* This adjustment must follow Item 18 (Black level).

1. Supply a white raster signal.
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VCJ2". ("AUDIO" button)
4. Set the data of the adjustment item "DMR" (R-DRIVE) and "DMB" (B-DRIVE). ("VIDEO" button)
5. Set the adjustment data so that the color of a white raster signal appears white. ("ADJUST" button)
6. Set the adjustment item to "SVS" (Single Horizontal Line Switchover). ("VIDEO" button)
7. Set the adjustment data to "00". (The screen will be changed to display a single horizontal line.) ("ADJUST" button)
8. Make sure that the color of the horizontal line is white. If not white, repeat the adjustment in Item 17 (CRT bias, Cut off).
9. Write the adjustment data. (Press "ENTER")
10. Terminate the circuit adjustment mode. (Press "MENU" twice)

[Deflection Circuit] 20. Horizontal position	**Adjustment purpose**	To set the horizontal position of the picture on screen.
	Symptom when incorrectly adjusted	Picture shifted to the left or the right.

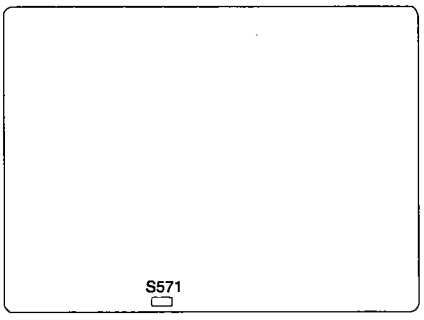
Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (monoscope)
Input terminal	VIDEO IN terminal

1. Supply a VIDEO signal (monoscope).
2. Set S571 so that the readings of the left and right markers are nearly the same.
3. Activate the circuit adjustment mode. (refer to page 17)
4. Set the adjustment function to "VCJ2". ("AUDIO" button)
5. Select adjustment item "HPH". ("VIDEO" button)
6. Set the adjustment data so the left and right markers are the same. ("ADJUST" button)
7. Write the adjustment data into memory. (Press "ENTER")
8. Terminate the circuit adjustment mode. (Press "MENU" twice)



Horizontal markers

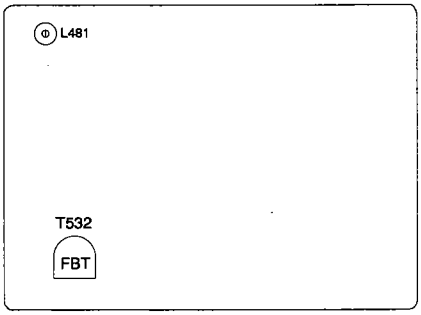
PCB-DEFL (COMPONENT SIDE)



[Deflection Circuit] 21. Top and Bottom PCC	**Adjustment purpose**	Minimize top and bottom pincushion distortion.
	Symptom when incorrectly adjusted	Top and bottom of picture bowed.

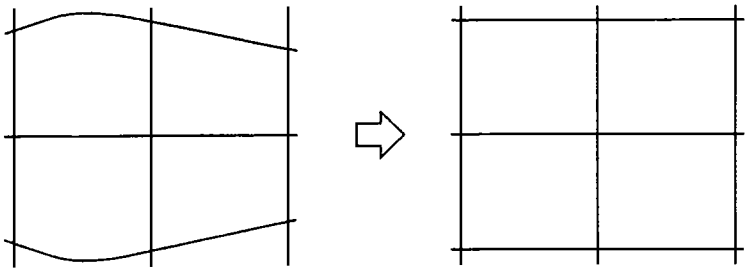
Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (crosshatch)
Input terminal	VIDEO IN terminal

PCB-DEFL (COMPONENT SIDE)



* Use a nonmetallic adjustment tool.

1. Supply a video signal (crosshatch).
2. Observe the bowing at the top and bottom of the crosshatch signal. Adjust L481 so that the raster distortion is minimum.



Bowing at top and bottom.

Normal (After adjustment)
Minimum bowing.

Crosshatch signal

[Deflection Circuit] 22. Vertical position	**Adjustment purpose**	Vertically center the picture.
	Symptom when incorrectly adjusted	Picture off center vertically.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (monoscope)
Input terminal	VIDEO IN terminal

1. Supply a video signal (monoscope).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "VDRV". ("AUDIO" button)
4. Set the adjustment item to "VPO" (V-Position). ("VIDEO" button)
5. Adjust the data of item "VPO" so vertical position is optimum. ("ADJUST" button)
6. Press "ENTER" to write data into memory.

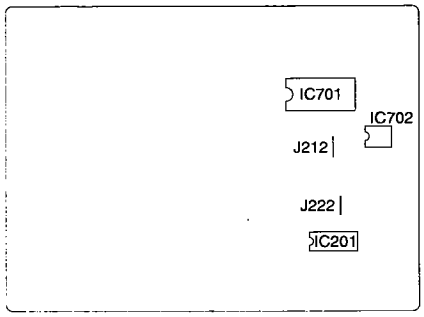
[High Voltage Control Circuit] 23. X-ray protector	**Adjustment purpose**	To set the maximum allowable HV sample in the protect circuit.
	Symptom when incorrectly adjusted	Premature X-Protect activation/Excess radiation.

Measuring instrument	DC voltmeter
Test point	+lead:pin 2 of TP5 -lead:pin 1 of TP5
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (monoscope)
Input terminal	VIDEO IN terminal

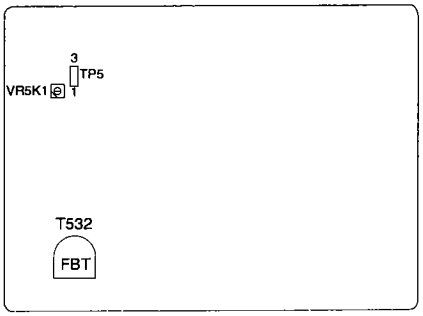
1. Supply a VIDEO signal (monoscope).
2. Short- circuit J212 and J222 to produce a single horizontal line.
3. Connect a DC voltmeter between pin 1 and pin 2 of TP5 (+ lead to pin 2 of TP5).
4. Adjust VR5K1 so the reading on the DC voltmeter is 0.73±0.02V.
5. Open short-circuit J212 and J222.
6. Lock VR5K1 by melting the plastic with the tip of a soldering iron.

Note: Adjustment Item 24 (Sub CONT) must be performed immediately after this adjustment.

PCB-SIGNAL (COMPONENT SIDE)



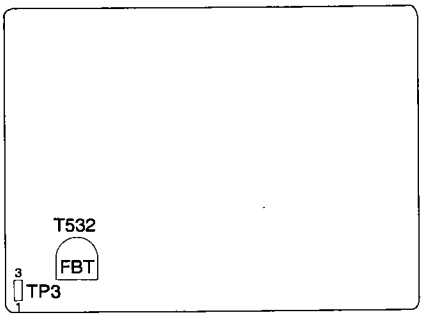
PCB-DEFL (COMPONENT SIDE)



[Video Circuit] 24. Sub CONT	**Adjustment purpose**	To set beam current to its optimum value.
	Symptom when incorrectly adjusted	Too bright or dark picture.

Measuring instrument	DC milliammeter
Test point	+lead:pin 1 of TP3 -lead:pin 3 of TP3
EXT trigger	---
Measurement range	---
Input signal	shown in Table 1
Input terminal	VIDEO IN or RF IN terminal

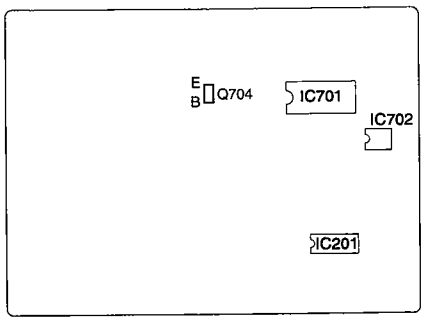
PCB-DEFL (COMPONENT SIDE)



* This adjustment must follow Item 23 (X-ray protector).
* Preheat the set for two minutes or more.
* Use an EIA color bar signal with chroma off or a standard color bar (87.5% MOD.) signal with chroma off for this adjustment.

1. Supply the VIDEO signal or the RF signal (shown in Table 1)
2. Short-circuit the base to emitter of Q704.
3. Activate the circuit adjustment mode. (refer to page 17)
4. Set the adjustment function to "VCJ2". ("AUDIO" button)
5. Set the adjustment item to "GMA" (γ-Positon). ("VIDEO" button)
6. Set the adjustment data to "07". ("ADJUST" button)
7. Connect a DC milliammeter between pins 1 and 3 of TP3. (+ to pin 1)
8. Set the adjustment item to "CNT" (CONTRAST). ("VIDEO" button)
9. Set the adjustment datd so the DC milliammeter indicates the value in Table 2. ("ADJUST" button and press "ENTER")
10. Set the adjustment item to "GMA" (γ-Position). ("VIDEO" button)
11. Set the adjustment data to "04". ("ADJUST" button)
12. Write the adjustment data. (Press "ENTER")
13. Terminate the circuit adjustment mode. (Press "MENU" twice)
14. Open short-circuit the base and emitter of Q704.

PCB-DEFL (COMPONENT SIDE)



VIDEO signal
EIA color bar • • • • • • Chroma off
2.0Vp-p (at no load)
Sync amplitude-0.6Vp-p
Set up-0%

RF signal
Standard color bar • • Chroma off
1 Vp-p (at 75Ω load)
87.5% MOD

Table 1 Input signal

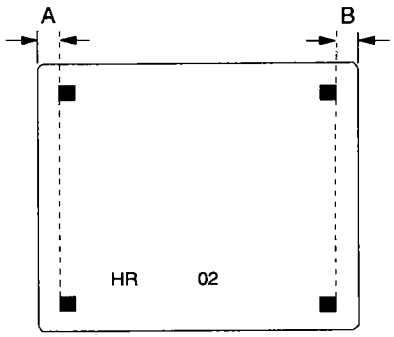
EIA color bar signal, Chroma off	Standard color bar (87.5% MOD.) signal, Chroma off
2930 ±100μA	3800 ±100μA

Table 2

[Screen character Circuit] 25. Character position	**Adjustment purpose**	To position the character display.
	Symptom when incorrectly adjusted	Incorrect character position.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	RF signal (standard broadcast)
Input terminal	RF IN terminal

1. Supply an RF signal (standard broadcast).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "HR". ("AUDIO" button)
4. Adjust the adjustment data so that spaces A and B are the same width. ("ADJUST" button)
5. Write the adjustment data into memory. (Press "ENTER")
6. Terminate the circuit adjustment mode. (Press "MENU" twice)

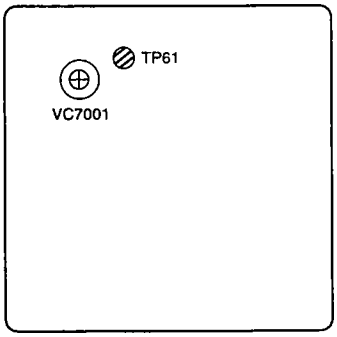


[PIP Circuit] 26. PIP fsc	**Adjustment purpose**	Set the clock frequency for PIP.
	Symptom when incorrectly adjusted	Interference or no color in the sub picture.

Measuring instrument	Frequency counter
Test point	TP61
EXT trigger	---
Measurement range	---
Input signal	RF signal (standard broadcast)
Input terminal	RF IN terminal

1. Supply an RF signal (standard broadcast).
2. Display standard broadcast on the sub picture screen. Supply no signal for the main screen.
3. Observe the frequency at TP61.
4. Adjust VC7001 so that the frequency is 3.579545±0.000100MHz.

PCB-PIP (COMPONENT SIDE)



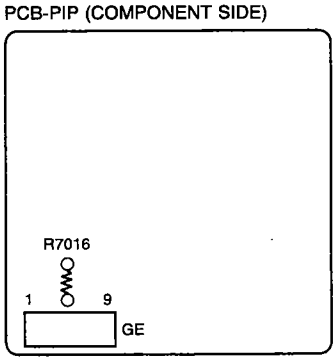
[PIP Circuit] 27. PIP chroma gain	**Adjustment purpose**	To set the color level between the main and sub picture.
	Symptom when incorrectly adjusted	Different color level between the main and sub picture.

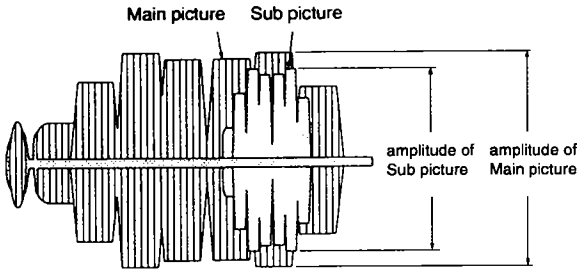
Measuring instrument	Oscilloscope
Test point	pin 7 of connector GE
EXT trigger	---
Measurement range	DIV 20mV TIM 10µs
Input signal	VIDEO signal (color bar)
Input terminal	VIDEO IN terminal

* Preheat the set for one minute or more.
1. Supply a VIDEO signal (color bar).
2. Activate the circuit adjustment mode. (refer to page 17)
3. Set the adjustment function to "PIP". ("AUDIO" button)
4. Set all items in adjustment function "PIP" to the initial data value (refer to page 19). ("VIDEO" and "ADJUST" buttons)
5. Observe the waveform at pin 7 of connector GE (GE side of R7016).
6. Select adjustment item "1 COLR". ("VIDEO" button)
7. Set the adjustment data so that the amplitude of the waveforms of the main and sub pictures are equal. ("ADJUST" button)
8. Write the adjustment data into memory. (Press "ENTER")
9. Terminate the circuit adjustment mode. (Press "MENU" twice)

Note: Adjustment Item 28 (PIP Sub TINT) must be performed immediately after this adjustment.

PCB-PIP (COMPONENT SIDE)





[PIP Circuit] 28. PIP Sub TINT	**Adjustment purpose**	To obtain the same hue in main and sub pictures.
	Symptom when incorrectly adjusted	Different hue between main and sub picture, and color smear.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Input signal	VIDEO signal (color bar)
Input terminal	VIDEO IN terminal

* Preheat the set for one minute or more.
* This adjustment must follow Item 27 (PIP chroma gain).
1. Supply a VIDEO signal (color bar).
2. Activate PIP and display the same picture on the main picture screen the and sub picture.
3. Activate the circuit adjustment mode. (refer to page 17)
4. Set the adjustment function to "PIP". ("AUDIO" button)
5. Select adjustment item "0 TINT". ("VIDEO" button)
6. Set the adjustment data so that the hue in the sub picture corresponds to the hue in the main picture.
7. Write the adjustment data into memory. (Press "ENTER")
8. Terminate the circuit adjustment mode. (Press "MENU" twice)

CHIP PARTS REPLACEMENT

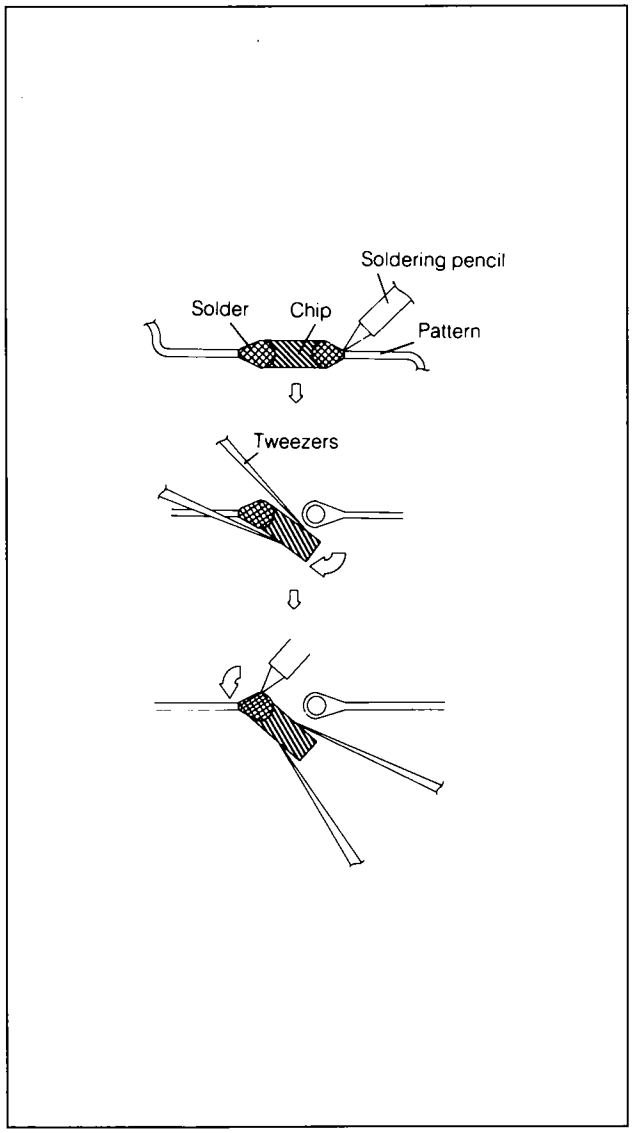
Some resistors, shorting jumpers (0Ω resistor). ceramic capacitors, transistors and diodes are chip parts. When replacing these parts, note the following cautions.

Cautions:

A. Use fine tipped, well insulated soldering pencil (iron) about 30 watts, and tweezers.
B. Melt the solder and remove the Chip Parts carefully so not to tear off the copper foil from the printed circuit board.
C. Discard removed chips; do not reuse them.
D. Do not apply heat for more than 3 seconds to new Chip Parts.
E. Avoid using a rubbing stroke when soldering.
F. Take care not to scratch, or damage the Chip Parts when soldering.
G. Supplementary cementing is not required.

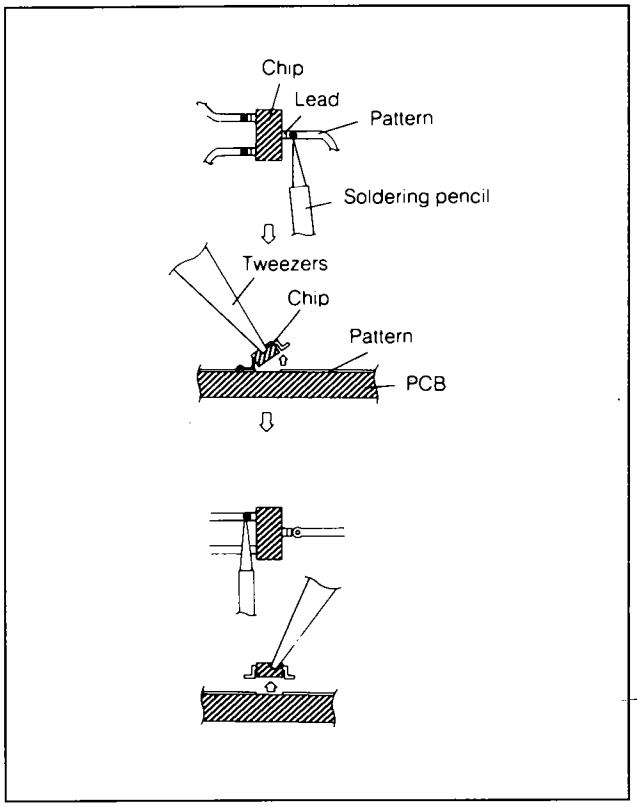
1 Removal of Chip Parts (Resistors, capacitors, etc.)

A. Grasp the part with tweezers. Melt the solder at both sides alternately and remove the one side of the part with a twisting motion.
B. Melt the solder at the other side and remove the part.



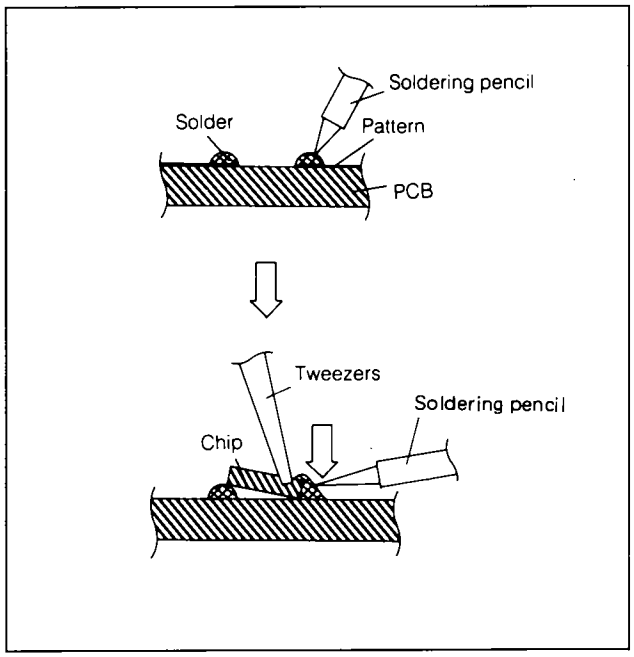
2 Removal of Chip Parts (Transistors)

A. Melt the solder of one lead and lift the side of that lead upward.
B. Simultaneously melt the solder of the two remaining leads and lift the part from the PCB.



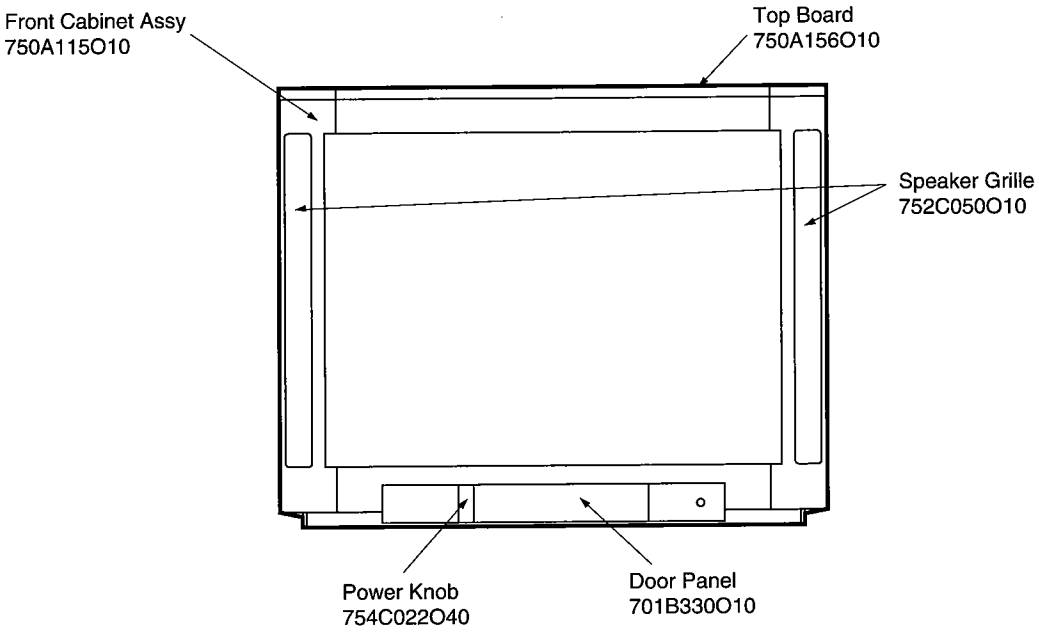
3 Replacement

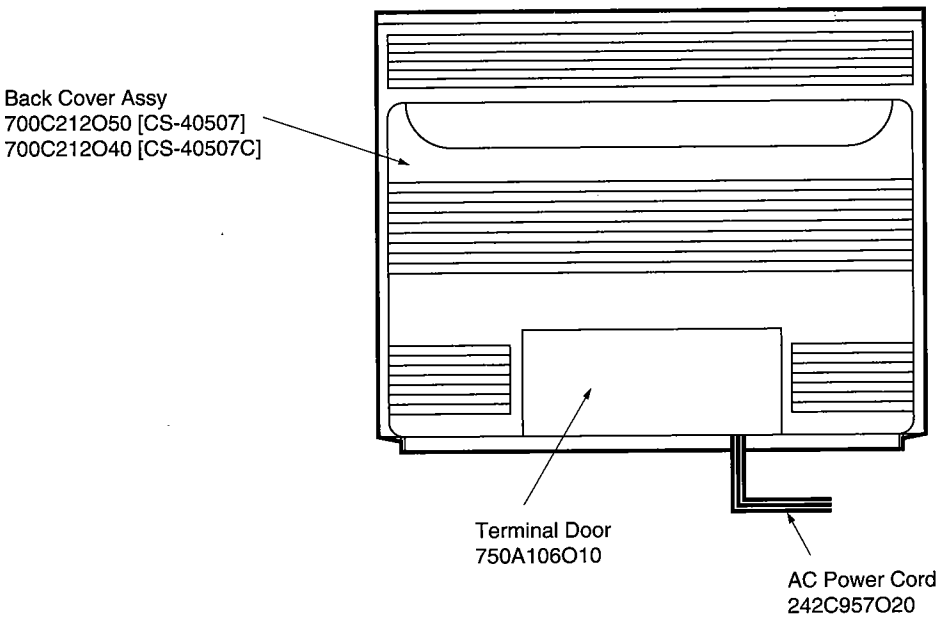
A. Presolder the contact points on the circuit pattern.
B. Press the part downward with tweezers and apply the soldering pencil as shown in the figure.



PARTS LIST

COSMETIC PARTS REFERENCE





ELECTRICAL PARTS AND OTHERS

MODEL : CS-40507/CS-40507C

In order to expedite delivery of replacement part orders.

Specify : 1.Model number/Serial number

2.Part number and Description

3.Quantity

Unless full information is supplied,delay in execution of orders will result.

* : Warranty return items

▒▒▒▒ : Critical components

MARK	B	C	D	F	G	J	K
TOLERANCE (%)	±0.1	±0.25	±0.5	±1	±2	±5	±10

MARK	M	N	V	X	Z	P	Q
TOLERANCE (%)	±20	±30	+10 -10	+40 -20	+80 -20	+100 -0	+30 -10

MARK	B	C	D	F	G
TOLERANCE (pF)	±0.1	±0.25	±0.5	±1	±2

ABBREVIATION

[40507] : CS-40507

[40507C] : CS-40507C

[40507] : CS-40507 [40507C] : CS-40507C

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION	
	TUBES			
V 271	255B825O10	CRT ASSY		[40507]
V 271	255B825O11	CRT ASSY	M100KWX13X	[40507C]
V 271	251P741O20	CRT ASSY	M100KWX13X	
	INTEGRATED CIRCUITS			
IC1D0	272P026O10	IC	M51366SP	
IC1V0	266P931O10	IC	L78M09	
IC1V1	272P872O10	IC	AN78N20	
IC201	272P955O30	IC	M52300BSP	
IC202	272P302O10	IC	PA0030	
IC2A1	270P212O10	IC	AN7812F	
IC2A2	270P124O20	IC	AN78M09F	
IC2A3	267P076O30	IC	SI-3050C	
IC2001	274P596O10	IC	TC9089AN	
IC2002	272P658O10	IC	MM1031XS	
IC2A01	272P937O20	IC	CXA1545AS	
IC301	272P440O10	IC	LA4282	
IC3A0	272P351O20	IC	µPC1871CU	
IC3001	272P184O10	IC	LA7222	
IC3002	272P139O10	IC	LA7953	
IC3003	266P172O10	IC	M5218AL	
IC3004	270P214O10	IC	BA8221AN	
IC401	270P064O10	IC	LA7833-S	
IC501	272P950O10	IC	TA8739P	
IC503	266P419O30	IC	5223L	
IC580	266P154O10	IC	µPC393C	
IC701	274P680O40	IC	M37266ME-A67SP	
IC702	274P253O10	IC	24C02A	
IC703	266P130O30	IC	PST520E	
IC704	266P932O10	IC	AN7805	
IC7001	270P187O10	IC	M52694P	
IC7002	274P553O10	IC	M65607SP	
IC7003	263P548O10	IC	HM53461ZP-12	
IC901	267P112O10	IC	STR-M6511	
IC902	270P212O10	IC	AN7812F	
IC903	270P212O10	IC	AN7812F	
IC950	267P062O10	IC	SE130N	
	TRANSISTORS			
Q 1A0	260P111O10	TRANSISTOR	2SC383	
Q 1A1	260P111O10	TRANSISTOR	2SC383	
Q 1A2	260P111O10	TRANSISTOR	2SC383	
Q 1A3	260P111O10	TRANSISTOR	2SC383	
Q 1F0	260P559O30	TRANSISTOR	2SC1740S-S	
Q 1M0	260P559O30	TRANSISTOR	2SC1740S-S	
Q 1M1	260P560O40	TRANSISTOR	2SA933S-S	
Q 1S0	260P560O40	TRANSISTOR	2SA933S-S	
Q 1S1	260P559O30	TRANSISTOR	2SC1740S-S	
Q 1T0	260P632O10	TRANSISTOR	DTC124ES	
Q 1T1	260P560O40	TRANSISTOR	2SA933S-S	
Q 201	260P559O30	TRANSISTOR	2SC1740S-S	
Q 202	260P559O30	TRANSISTOR	2SC1740S-S	
Q 203	260P559O30	TRANSISTOR	2SC1740S-S	
Q 204	260P560O40	TRANSISTOR	2SA933S-S	
Q 205	260P560O40	TRANSISTOR	2SA933S-S	
Q 206	260P559O30	TRANSISTOR	2SC1740S-S	
Q 207	260P560O40	TRANSISTOR	2SA933S-S	
Q 208	260P559O30	TRANSISTOR	2SC1740S-S	
Q 209	260P559O30	TRANSISTOR	2SC1740S-S	
Q 211	260P560O40	TRANSISTOR	2SA933S-S	
Q 290	260P560O40	TRANSISTOR	2SA933S-S	
Q 291	260P559O50	TRANSISTOR	2SC1740S-E	
Q 2Z1	260P632O10	TRANSISTOR	DTC124ES	
Q 2030	260P818O30	CHIP TRANSISTOR	2SC2412KS	
Q 2040	260P818O30	CHIP TRANSISTOR	2SC2412KS	
Q 2050	260P818O30	CHIP TRANSISTOR	2SC2412KS	
Q 2051	260P818O30	CHIP TRANSISTOR	2SC2412KS	
Q 2052	260P818O30	CHIP TRANSISTOR	2SC2412KS	
Q 2070	260P817O30	CHIP TRANSISTOR	2SA1037K-S	
Q 2A01	260P632O10	TRANSISTOR	DTC124ES	
Q 2A02	260P559O30	TRANSISTOR	2SC1740S-S	
Q 2A03	260P559O30	TRANSISTOR	2SC1740S-S	
Q 2A04	260P559O30	TRANSISTOR	2SC1740S-S	
Q 2A05	260P559O30	TRANSISTOR	2SC1740S-S	
Q 2A06	260P559O30	TRANSISTOR	2SC1740S-S	
Q 2A07	260P559O30	TRANSISTOR	2SC1740S-S	
Q 2A08	260P559O30	TRANSISTOR	2SC1740S-S	
Q 2A09	260P559O30	TRANSISTOR	2SC1740S-S	
Q 2A10	260P632O10	TRANSISTOR	DTC124ES	
Q 2A11	260P632O10	TRANSISTOR	DTC124ES	
Q 301	260P521O10	TRANSISTOR	2SC2878-B	
Q 302	260P559O30	TRANSISTOR	2SC1740S-S	
Q 303	260P632O10	TRANSISTOR	DTC124ES	
Q 304	260P560O40	TRANSISTOR	2SA933S-S	
Q 3D0	260P356O10	TRANSISTOR	2SC1906	
Q 3Z1	260P559O30	TRANSISTOR	2SC1740S-S	
Q 3001	260P635O10	TRANSISTOR	2SC3065-F	
Q 3002	260P635O10	TRANSISTOR	2SC3065-F	
Q 3003	260P635O10	TRANSISTOR	2SC3065-F	
Q 3004	260P560O40	TRANSISTOR	2SA933S-S	
Q 3005	260P521O10	TRANSISTOR	2SC2878-B	
Q 3006	260P521O10	TRANSISTOR	2SC2878-B	
Q 3007	260P521O10	TRANSISTOR	2SC2878-B	
Q 3008	260P521O10	TRANSISTOR	2SC2878-B	
Q 3009	260P559O30	TRANSISTOR	2SC1740S-S	
Q 3010	260P560O40	TRANSISTOR	2SA933S-S	
Q 3011	260P559O30	TRANSISTOR	2SC1740S-S	
Q 3012	260P559O30	TRANSISTOR	2SC1740S-S	
Q 402	260P325O30	TRANSISTOR	2SC2655-Y	
Q 403	260P167O30	TRANSISTOR	2SA673A-C	
Q 404	260P325O30	TRANSISTOR	2SC2655-Y	
Q 4B1	260P560O40	TRANSISTOR	2SA933S-S	
Q 502	260P559O30	TRANSISTOR	2SC1740S-S	
Q 503	260P428O20	TRANSISTOR	2SC2168-Y	
Q 504	260P416O30	TRANSISTOR	2SC2274-F	
Q 515	260P559O50	TRANSISTOR	2SC1740S-E	
Q 531	260P666O10	TRANSISTOR	2SK855	
Q 532	260P621O10	TRANSISTOR	2SD1881	
Q 5A6	260P559O30	TRANSISTOR	2SC1740S-S	
Q 5000	260P664O30	TRANSISTOR	2SC4636	
Q 5001	260P664O30	TRANSISTOR	2SC4636	

[40507] : CS-40507

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
Q 5002	260P559O50	TRANSISTOR	2SC1740S-E
Q 5003	260P560O40	TRANSISTOR	2SA933S-S
Q 5004	260P559O50	TRANSISTOR	2SC1740S-E
Q 5005	260P559O50	TRANSISTOR	2SC1740S-E
Q 601	260P559O30	TRANSISTOR	2SC1740S-S
Q 603	260P559O30	TRANSISTOR	2SC1740S-S
Q 604	260P559O30	TRANSISTOR	2SC1740S-S
Q 605	260P560O40	TRANSISTOR	2SA933S-S
Q 606	260P560O40	TRANSISTOR	2SA933S-S
Q 607	260P560O40	TRANSISTOR	2SA933S-S
Q 608	260P559O30	TRANSISTOR	2SC1740S-S
Q 609	260P560O40	TRANSISTOR	2SA933S-S
Q 610	260P559O30	TRANSISTOR	2SC1740S-S
Q 651	260P416O30	TRANSISTOR	2SC2274-F
Q 652	260P416O30	TRANSISTOR	2SC2274-F
Q 653	260P416O30	TRANSISTOR	2SC2274-F
Q 654	260P571O10	TRANSISTOR	2SC3789-D,E
Q 655	260P571O10	TRANSISTOR	2SC3789-D,E
Q 656	260P571O10	TRANSISTOR	2SC3789-D,E
Q 6C1	260P632O10	TRANSISTOR	DTC124ES
Q 6C2	260P559O30	TRANSISTOR	2SC1740S-S
Q 6C3	260P559O30	TRANSISTOR	2SC1740S-S
Q 701	260P559O30	TRANSISTOR	2SC1740S-S
Q 702	260P559O30	TRANSISTOR	2SC1740S-S
Q 703	260P559O30	TRANSISTOR	2SC1740S-S
Q 704	260P559O30	TRANSISTOR	2SC1740S-S
Q 706	260P632O10	TRANSISTOR	DTC124ES
Q 707	260P632O10	TRANSISTOR	DTC124ES
Q 708	260P603O10	TRANSISTOR	UN4112
Q 709	260P632O10	TRANSISTOR	DTC124ES
Q 710	260P559O30	TRANSISTOR	2SC1740S-S
Q 711	260P560O40	TRANSISTOR	2SA933S-S
Q 712	260P559O30	TRANSISTOR	2SC1740S-S
Q 713	260P559O30	TRANSISTOR	2SC1740S-S
Q 714	260P582O10	TRANSISTOR	2SK656
Q 715	260P632O10	TRANSISTOR	DTC124ES
Q 716	260P521O10	TRANSISTOR	2SC2878-B
Q 717	260P559O30	TRANSISTOR	2SC1740S-S
Q 718	260P560O40	TRANSISTOR	2SA933S-S
Q 719	260P632O10	TRANSISTOR	DTC124ES
Q 720	260P559O30	TRANSISTOR	2SC1740S-S
Q 723	260P632O10	TRANSISTOR	DTC124ES
Q 7001	260P560O40	TRANSISTOR	2SA933S-S
Q 7002	260P560O40	TRANSISTOR	2SA933S-S
Q 7003	260P560O40	TRANSISTOR	2SA933S-S
Q 7004	260P560O40	TRANSISTOR	2SA933S-S
Q 7007	260P559O30	TRANSISTOR	2SC1740S-S
Q 7600	260P560O40	TRANSISTOR	2SA933S-S
Q 8A1	260P559O50	TRANSISTOR	2SC1740S-E
Q 8A2	260P632O10	TRANSISTOR	DTC124ES
Q 8A3	260P560O40	TRANSISTOR	2SA933S-S
Q 8001	260P573O20	TRANSISTOR	2SB940A-P
Q 8002	260P574O20	TRANSISTOR	2SD1264A-P
Q 8003	260P559O50	TRANSISTOR	2SC1740S-E
Q 8004	260P560O40	TRANSISTOR	2SA933S-S
Q 8005	260P559O50	TRANSISTOR	2SC1740S-E
Q 8006	260P559O50	TRANSISTOR	2SC1740S-E

[40507C] : CS-40507C

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
Q 8007	260P559O50	TRANSISTOR	2SC1740S-E
Q 8008	260P559O50	TRANSISTOR	2SC1740S-E
Q 8009	260P559O50	TRANSISTOR	2SC1740S-E
Q 8010	260P635O10	TRANSISTOR	2SC3065-F
Q 8011	260P559O50	TRANSISTOR	2SC1740S-E
Q 901	260P422O10	TRANSISTOR	2SC2482
Q 902	260P560O40	TRANSISTOR	2SA933S-S
Q 903	260P560O40	TRANSISTOR	2SA933S-S
Q 905	260P559O50	TRANSISTOR	2SC1740S-E
Q 906	260P610O10	TRANSISTOR	2SC4004
Q 907	260P387O30	TRANSISTOR	2SC2236-Y
Q 911	260P559O50	TRANSISTOR	2SC1740S-E
Q 912	260P559O50	TRANSISTOR	2SC1740S-E
Q 913	260P559O50	TRANSISTOR	2SC1740S-E
Q 914	260P559O50	TRANSISTOR	2SC1740S-E
Q 916	260P422O10	TRANSISTOR	2SC2482
Q 931	260P427O20	TRANSISTOR	2SC1826-Y
Q 940	260P559O50	TRANSISTOR	2SC1740S-E
	DIODES		
D 1F0	264P502O10	DIODE	HZ5ALL
D 1T0	264P491O90	DIODE	RD30FB3
D 251	264P045O40	DIODE	1S2471OM
D 2A01	264P485O60	DIODE	RD7.5FB2
D 2A02	264P485O60	DIODE	RD7.5FB2
D 2A03	264P485O60	DIODE	RD7.5FB2
D 2A04	264P485O60	DIODE	RD7.5FB2
D 2A05	264P485O60	DIODE	RD7.5FB2
D 2A08	264P485O60	DIODE	RD7.5FB2
D 301	264P045O40	DIODE	1S2471OM
D 303	264P045O40	DIODE	1S2471OM
D 304	264P045O40	DIODE	1S2471OM
D 305	264P045O40	DIODE	1S2471OM
D 3001	264P045O40	DIODE	1S2471OM
D 3002	264P045O40	DIODE	1S2471OM
D 3004	264P045O40	DIODE	1S2471OM
D 3005	264P045O40	DIODE	1S2471OM
D 3006	264P045O40	DIODE	1S2471OM
D 3007	264P045O40	DIODE	1S2471OM
D 413	264P522O10	DIODE	RU 1P
D 421	264P045O40	DIODE	1S2471OM
D 422	264P045O40	DIODE	1S2471OM
D 433	264D056O20	DIODE	ERB12-02RK
D 442	264P457O50	DIODE	RD3.0EB1
D 466	264D056O20	DIODE	ERB12-02RK
D 467	264D056O20	DIODE	ERB12-02RK
D 468	264P483O90	DIODE	RD5.1FB3
D 469	264P485O30	DIODE	RD6.8FB3
D 500	264P486O60	DIODE	RD9.1FB3
D 511	264P045O40	DIODE	1S2471OM
D 512	264P045O40	DIODE	1S2471OM
D 520	264P487O90	DIODE	RD12FB3
D 537	264P624O10	DIODE	FMS-3FU
D 552	264P295O20	DIODE	ES 1C
D 571	264P521O30	DIODE	EU 2
D 580	264P502O10	DIODE	HZ5ALL

[40507] : CS-40507 [40507C] : CS-40507C

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
D 583	264P486O60	DIODE	RD9.1FB3
D 584	264P487O10	DIODE	RD10FB3
D 585	264D056O20	DIODE	ERB12-02RK
D 5A4	264P045O40	DIODE	1S2471OM
D 5A5	264P045O40	DIODE	1S2471OM
D 5A8	264P045O40	DIODE	1S2471OM
D 5A9	264P045O40	DIODE	1S2471OM
D 5B1	264P045O40	DIODE	1S2471OM
D 5X1	264D056O20	DIODE	ERB12-02RK
D 5X2	264P825O10	DIODE	ERA15-02
D 5X3	264P501O40	DIODE	HZ3ALL
D 5X4	264P045O40	DIODE	1S2471OM
D 5000	264P528O30	DIODE	RP 1H
D 5001	264P045O40	DIODE	1S2471OM
D 5002	264P488O20	DIODE	RD13FB1
D 5004	264P045O40	DIODE	1S2471OM
D 5005	264P045O40	DIODE	1S2471OM
D 5006	264P543O10	DIODE	EG01
D 5007	264P543O10	DIODE	EG01
D 5008	264P045O40	DIODE	1S2471OM
D 5E60	264P825O10	DIODE	ERA15-02
D 5E61	264P825O10	DIODE	ERA15-02
D 5X10	264P528O30	DIODE	RP 1H
D 651	264P045O40	DIODE	1S2471OM
D 652	264P486O80	DIODE	RD10FB1
D 6B4	264P045O40	DIODE	1S2471OM
D 6B5	264P458O50	DIODE	RD3.9EB1
D 6B6	264P045O40	DIODE	1S2471OM
D 6B7	264P045O40	DIODE	1S2471OM
D 6B8	264P045O40	DIODE	1S2471OM
D 6C1	264P045O40	DIODE	1S2471OM
D 6C2	264P045O40	DIODE	1S2471OM
D 6C3	264P045O40	DIODE	1S2471OM
D 6C6	264P045O40	DIODE	1S2471OM
D 6001	264P485O60	DIODE	RD7.5FB2
D 6002	264P485O60	DIODE	RD7.5FB2
D 6003	264P485O60	DIODE	RD7.5FB2
D 6004	264P485O60	DIODE	RD7.5FB2
D 6005	264P485O60	DIODE	RD7.5FB2
D 6006	264P485O60	DIODE	RD7.5FB2
D 701	264P502O30	DIODE	HZ5CLL
D 702	264P045O40	DIODE	1S2471OM
D 703	264P045O40	DIODE	1S2471OM
D 704	264P045O40	DIODE	1S2471OM
D 705	264P045O40	DIODE	1S2471OM
D 706	264P045O40	DIODE	1S2471OM
D 708	264P488O20	DIODE	RD13FB1
D 709	264P045O40	DIODE	1S2471OM
D 710	264P045O40	DIODE	1S2471OM
D 711	264P045O40	DIODE	1S2471OM
D 712	264P045O40	DIODE	1S2471OM
D 713	264P045O40	DIODE	1S2471OM
D 714	264P045O40	DIODE	1S2471OM
D 715	264P045O40	DIODE	1S2471OM
D 7Q1	264P502O30	DIODE	HZ5CLL
D 7Q2	264P502O30	DIODE	HZ5CLL
D 7Q3	264P502O30	DIODE	HZ5CLL
D 7Q4	264P502O30	DIODE	HZ5CLL
D 7Q5	264P502O30	DIODE	HZ5CLL
D 7Q6	264P045O40	DIODE	1S2471OM
D 7001	264P045O40	DIODE	1S2471OM
D 7002	264P045O40	DIODE	1S2471OM
D 7600	264P584O10	LIGHT EMITTING DIODE	SML1216W
D 8001	264P045O40	DIODE	1S2471OM
D 8002	264P045O40	DIODE	1S2471OM
D 8003	264D056O20	DIODE	ERB12-02RK
D 8004	264D056O20	DIODE	ERB12-02RK
D 8005	264P045O40	DIODE	1S2471OM
D 8008	264P045O40	DIODE	1S2471OM
D 901	264P535O10	DIODE	RBV-608
D 902	264P622O10	DIODE	AL01Z
D 903	264P101O50	DIODE	RM 1B
D 904	264P622O10	DIODE	AL01Z
D 905	264P622O10	DIODE	AL01Z
D 906	264P488O20	DIODE	RD13FB1
D 907	264P589O10	DIODE	FML-G22S
D 908	264P522O10	DIODE	RU 1P
D 909	264P578O10	DIODE	RG 2A
D 910	264P588O10	DIODE	FML-G16S
D 911	264P589O10	DIODE	FML-G22S
D 914	264P622O10	DIODE	AL01Z
D 919	264P102O20	DIODE	RU 3B
D 920	264P457O50	DIODE	RD3.0EB1
D 932	264P470O70	DIODE	RD33EB3
D 947	264P045O40	DIODE	1S2471OM
D 948	264P045O40	DIODE	1S2471OM
D 951	264D056O20	DIODE	ERB12-02RK
D 952	264P045O40	DIODE	1S2471OM
D 981	264P522O10	DIODE	RU 1P
D 982	264P488O30	DIODE	RD13FB2
D 983	264P295O20	DIODE	ES 1C
D 984	264P295O20	DIODE	ES 1C
D 985	264P295O20	DIODE	ES 1C
D 986	264P203O20	LIGHT EMITTING DIODE	TLG124A-E
	OTHER SEMICONDUCTORS		
RP901	265P071O40	POSITIVE THERMISTOR	<C5R0M>
	FILTERS		
CF1D0	296P024O70	CERAMIC TRAP	TSP4.5MC19
CF3D0	296P067O20	CERAMIC FILTER	SFSH4.5μF-
CF5A1	299P051O10	CERAMIC RESONATOR	CSB503F2
SF1D0	296P096O20	SAW FILTER	SAF45MVK56Z
SF3D0	296P092O10	SAW FILTER	SAF41MC70Z
T 601	409P499O20	BAND PASS FILTER	3.58MHz
	DELAY LINES		
DL201	337P142O30	DELAY LINE	200NS
DL203	337P195O10	DELAY LINE	ZLB-5L7100
DL801	337P194O10	DELAY LINE	G287ENKS-10076
DL802	337P142O30	DELAY LINE	200NS

[40507] : CS-40507 [40507C] : CS-40507C

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
	COILS		
	409B106O40	DEGAUSSING COIL	
	411D014O10	FERRITE CORE FILTER	ESD-R-25D
	330P192O10	DEFLECTION YOKE COIL	T330B19201
L 106	323P171O10	VIF COIL	45.75MHz
L 107	323P111O20	VIF COIL	45MHz
L 1D0	325C122O30	PEAKING COIL	68µH-K
L 1D1	325C120O20	PEAKING COIL	1.2µH-M/K
L 1D4	325C166O30	PEAKING COIL	10µH-J
L 1D5	325C122O30	PEAKING COIL	68µH-K
L 1S0	325C103O70	PEAKING COIL	1000µH-K
L 1T0	325C121O30	PEAKING COIL	10µH-K
L 1T2	325C121O30	PEAKING COIL	10µH-K
L 1T3	325C121O30	PEAKING COIL	10µH-K
L 1T4	325C121O30	PEAKING COIL	10µH-K
L 203	325C106O40	PEAKING COIL	12µH-J
L 204	325C121O30	PEAKING COIL	10µH-K
L 205	325C121O30	PEAKING COIL	10µH-K
L 207	325C106O90	PEAKING COIL	33µH-J
L 2A1	325C120O70	PEAKING COIL	3.3µH-K
L 2A2	325C121O30	PEAKING COIL	10µH-K
L 2A3	321C031O40	RF COIL	10µH-K
L 2A4	325C100O70	PEAKING COIL	3.3µH-K
L 2A5	325C121O30	PEAKING COIL	10µH-K
L 2A6	325C120O70	PEAKING COIL	3.3µH-K
L 2A8	325C121O30	PEAKING COIL	10µH-K
L 2010	325C140O10	CHIP COIL	1.0µH-M
L 2011	325C140O10	CHIP COIL	1.0µH-M
L 2012	325C140O10	CHIP COIL	1.0µH-M
L 2031	325C141O80	CHIP COIL	27µH-K
L 2040	325C141O80	CHIP COIL	27µH-K
L 2050	325C141O80	CHIP COIL	27µH-K
L 2060	325C141O90	CHIP COIL	33µH-K 322522
L 2A01	325C166O30	PEAKING COIL	10µH-J
L 301	321D019O10	RF COIL	0.47µH-K
L 302	321D019O10	RF COIL	0.47µH-K
L 303	327P072O10	SIF COIL	TKACS-27071BY
L 3D0	325C122O30	PEAKING COIL	68µH-K
L 3D1	325C120O10	PEAKING COIL	1.0µH-M
L 3001	325C166O30	PEAKING COIL	10µH-J
L 461	321C130O10	RF COIL	2.0MH +-15%
L 481	335P005O50	H-WIDTH COIL	
L 4B1	325C108O10	PEAKING COIL	330µH-J
L 552	321D019O10	RF COIL	0.47µH-K
L 553	411P001O10	LEAD FERRITE	
L 555	333P036O10	H-LIN.COIL	
L 571	409P006O80	FILTER COIL	6800µH-J
L 574	335P011O60	CHOKE COIL	350MHz
L 5000	411P001O40	LEAD FERRITE	
L 601	325C106O30	PEAKING COIL	10µH-J
L 602	325C121O30	PEAKING COIL	10µH-K
L 603	325C121O30	PEAKING COIL	10µH-K
L 604	325C121O30	PEAKING COIL	10µH-K
L 606	325C106O50	PEAKING COIL	15µH-J
L 610	325C106O50	PEAKING COIL	15µH-J
L 651	325C302O30	PEAKING COIL	68µH-K
L 652	325C302O30	PEAKING COIL	68µH-K
L 653	325C302O30	PEAKING COIL	68µH-K
L 654	325C301O80	PEAKING COIL	27µH-K
L 655	325C301O80	PEAKING COIL	27µH-K
L 656	325C301O80	PEAKING COIL	27µH-K
L 657	325C111O50	PEAKING COIL	15µH-K
L 701	325C121O30	PEAKING COIL	10µH-K
L 702	325C121O30	PEAKING COIL	10µH-K
L 704	325C121O30	PEAKING COIL	10µH-K
L 705	325C121O30	PEAKING COIL	10µH-K
L 706	325C121O30	PEAKING COIL	10µH-K
L 707	325C121O30	PEAKING COIL	10µH-K
L 708	325C121O30	PEAKING COIL	10µH-K
L 709	321C011O40	RF COIL	6800µH-J
L 7X1	325C106O30	PEAKING COIL	10µH-J
L 7001	325C121O30	PEAKING COIL	10µH-K
L 7002	325C121O30	PEAKING COIL	10µH-K
L 7003	325C121O30	PEAKING COIL	10µH-K
L 7004	325C121O30	PEAKING COIL	10µH-K
L 7006	325C121O30	PEAKING COIL	10µH-K
L 7600	325C121O30	PEAKING COIL	10µH-K
L 7601	325C121O30	PEAKING COIL	10µH-K
L 7602	325C121O30	PEAKING COIL	10µH-K
L 7603	325C121O30	PEAKING COIL	10µH-K
L 8001	411D009O20	FERRITE CORE FILTER	
L 904	409P674O20	FILTER COIL	TSL0707-6R8M-
L 905	321C132O30	RF COIL	100MH+-7.5%
L 907	411P012O10	BEAD FERRITE	B-6-31A1-A
L 908	321D019O10	RF COIL	0.47µH-K
L 909	411P011O10	BEAD FERRITE	
L 911	411D009O20	FERRITE CORE FILTER	
L 912	411P012O10	BEAD FERRITE	B-6-31A1-A
L 913	351P064O30	LINE FILTER	SE26TL-40030A
L 914	411P001O40	LEAD FERRITE	
L 915	321C130O90	RF COIL	10µH-K
L 916	351P064O30	LINE FILTER	SE26TL-40030A
L 917	409P794O10	FILTER COIL	33MH +-20%
L 920	409P674O10	FILTER COIL	
L 921	351P064O30	LINE FILTER	SE26TL-40030A
L 924	411P012O10	BEAD FERRITE	B-6-31A1-A
L 925	411P011O10	BEAD FERRITE	
LC2091	409P402O30	EMI FILTER	FZ103N100
LC2092	409P402O30	EMI FILTER	FZ103N100
LC2095	409P402O10	EMI FILTER	B101M100
LC701	409P402O10	EMI FILTER	B101M100
LC702	409P402O10	EMI FILTER	B101M100
LC703	409P402O10	EMI FILTER	B101M100
LC704	409P402O10	EMI FILTER	B101M100
LC7001	409P402O30	EMI FILTER	FZ103N100
LC7002	409P402O10	EMI FILTER	B101M100
LC7003	409P402O10	EMI FILTER	B101M100
LC7004	409P402O10	EMI FILTER	B101M100
LC7005	409P402O10	EMI FILTER	B101M100
LC7008	409P402O10	EMI FILTER	B101M100
T 1A0	320P026O30	TRAP COIL	
T 1A1	320P052O10	TRAP COIL	51.75MHz

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SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
T 1A2	320P026O30	TRAP COIL	
		TRANSFORMERS	
	334D100O17	FLYBACK	334P237-20&CAP
T 481	349P161O70	TOP BOTTOM PCC	
T 531	336P017O10	H.DRIVE	
T 551	349P122O50	SIDE PCC	
T 901	350P602O20	POWER	
T 902	350P603O10	POWER	
		VARIABLE RESISTORS	
VR1D0	127C390O60	VR-SEMIFIXED	1/5W B3kΩ-M
VR1M0	127C380O40	VR-SEMIFIXED	1/5W B1kΩ-M
VR350	127C380O50	VR-SEMIFIXED	1/5W B2kΩ-M
VR351	127C380O90	VR-SEMIFIXED	1/5W B20kΩ-M
VR353	127C380O70	VR-SEMIFIXED	1/5W B5kΩ-M
VR354	127C380O70	VR-SEMIFIXED	1/5W B5kΩ-M
VR355	127C391O10	VR-SEMIFIXED	1/5W B50kΩ-M
VR5K1	129D130O90	VR-SEMIFIXED	1/4W B10kΩ-M
		RESISTORS	
L 2013	103P359O50	CHIP RESISTOR	1/8W 0Ω(3216)
R 2010	103P479O00	CHIP METAL	1/10W 510kΩ-F
R 2011	103P403O10	CHIP RESISTOR	1/10W 3.3kΩ-J
R 2012	103P403O10	CHIP RESISTOR	1/10W 3.3kΩ-J
R 2013	103P402O40	CHIP RESISTOR	1/10W 820Ω-J
R 2016	103P403O00	CHIP RESISTOR	1/10W 2.7kΩ-J
R 2017	103P403O10	CHIP RESISTOR	1/10W 3.3kΩ-J
R 2018	103P474O70	CHIP RESISTOR	1/10W 8.2kΩ-F
R 2019	103P473O70	CHIP RESISTOR	1/10W 3.3kΩ-F
R 2031	103P402O10	CHIP RESISTOR	1/10W 470Ω-J
R 2032	103P473O00	CHIP RESISTOR	1/10W 1.6kΩ-F
R 2033	103P401O30	CHIP RESISTOR	1/10W 100Ω-J
R 2034	103P403O70	CHIP RESISTOR	1/10W 10kΩ-J
R 2040	103P472O20	CHIP RESISTOR	1/10W 750Ω-F
R 2041	103P472O40	CHIP RESISTOR	1/10W 910Ω-F
R 2043	103P401O30	CHIP RESISTOR	1/10W 100Ω-J
R 2050	103P472O20	CHIP RESISTOR	1/10W 750Ω-F
R 2051	103P472O40	CHIP RESISTOR	1/10W 910Ω-F
R 2053	103P404O60	CHIP RESISTOR	1/10W 56kΩ-J
R 2054	103P404O20	CHIP RESISTOR	1/10W 27kΩ-J
R 2055	103P403O30	CHIP RESISTOR	1/10W 4.7kΩ-J
R 2056	103P402O90	CHIP RESISTOR	1/10W 2.2kΩ-J
R 2057	103P403O40	CHIP RESISTOR	1/10W 5.6kΩ-J
R 2058	103P401O30	CHIP RESISTOR	1/10W 100Ω-J
R 2070	103P403O10	CHIP RESISTOR	1/10W 3.3kΩ-J
R 2071	103P402O50	CHIP RESISTOR	1/10W 1kΩ-J
R 2080	103P409O50	CHIP RESISTOR	0.1W 0Ω(2125)
R 2083	103P409O50	CHIP RESISTOR	0.1W 0Ω(2125)
R 2084	103P409O50	CHIP RESISTOR	0.1W 0Ω(2125)
R 308	103P378O40	FUSE	1/4W 2.2Ω-J
R 310	103P378O40	FUSE	1/4W 2.2Ω-J
R 3054	103P370O10	FUSE	1/4W 10Ω-J
R 3066	103P370O30	FUSE	1/4W 15Ω-J
R 482	103P390O60	FUSE	1/2W 27Ω-J
R 483	103P458O00	FUSE	2W 1.0Ω-K
R 484	103P391O60	FUSE	1/2W 180Ω-J
R 526	103P392O50	FUSE	1/2W 1kΩ-J
R 565	109D074O50	CEMENT METAL	5W 4.7kΩ-K/J
R 5C0	103P338O10	R-CARBON	1/4W 1.2Ω-J
R 5038	103P391O30	FUSE	1/2W 100Ω-J
R 5X10	103P392O50	FUSE	1/2W 1kΩ-J
R 5Y02	103P392O20	FUSE	1/2W 560Ω-J
R 5Y03	103P392O20	FUSE	1/2W 560Ω-J
R 611	103P542O70	NETWORK	1/8W 1.5kΩ-JX4
R 685	103P437O90	FUSE METAL	2W 0.82Ω-K
R 774	103P543O90	NETWORK	1/8W 15kΩ-JX4
R 7024	103P544O10	NETWORK	1/8W 22kΩ-JX4
R 907	102P107O30	WIRE	2W 0.27Ω-K
R 908	102P107O40	WIRE	2W 0.33Ω-K
R 909	102P107O30	WIRE	2W 0.27Ω-K
R 985	102P080O10	CEMENT WIRE	5W 2.2Ω-K
		CAPACITORS AND TRIMMERS	
C 2010	141P132O10	CHIP CAPACITOR	B50V 0.01μF-K
C 2011	141P133O80	CHIP CAPACITOR	F50V 0.01μF-Z
C 2013	141P132O10	CHIP CAPACITOR	B50V 0.01μF-K
C 2015	141P131O70	CHIP CAPACITOR	B50V 4700pF-K
C 2016	154P334O10	CHIP CAPACITOR	CH50V 180pF-J
C 2017	172P391O30	CHIP C-FILM	16V 0.01M
C 2018	141P133O80	CHIP CAPACITOR	F50V 0.01μF-Z
C 2020	141P133O80	CHIP CAPACITOR	F50V 0.01μF-Z
C 2022	141P132O10	CHIP CAPACITOR	B50V 0.01μF-K
C 2023	141P132O10	CHIP CAPACITOR	B50V 0.01μF-K
C 2024	141P132O10	CHIP CAPACITOR	B50V 0.01μF-K
C 2026	141P133O80	CHIP CAPACITOR	F50V 0.01μF-Z
C 2027	141P132O10	CHIP CAPACITOR	B50V 0.01μF-K
C 2028	141P132O10	CHIP CAPACITOR	B50V 0.01μF-K
C 2030	154P333O10	CHIP CAPACITOR	CH50V 68pF-J
C 2032	154P331O10	CHIP CAPACITOR	CH50V 10pF-C
C 2040	154P331O30	CHIP CAPACITOR	CH50V 12pF-J
C 2041	154P332O10	CHIP CAPACITOR	CH50V 27pF-J
C 2043	141P132O10	CHIP CAPACITOR	B50V 0.01μF-K
C 2050	154P331O30	CHIP CAPACITOR	CH50V 12pF-J
C 2051	154P332O30	CHIP CAPACITOR	CH50V 33pF-J
C 2052	141P132O10	CHIP CAPACITOR	B50V 0.01μF-K
C 2054	141P133O80	CHIP CAPACITOR	F50V 0.01μF-Z
C 2055	154P332O10	CHIP CAPACITOR	CH50V 27pF-J
C 2060	154P332O90	CHIP CAPACITOR	CH50V 56pF-J
C 2061	154P333O50	CHIP CAPACITOR	CH50V 100pF-J
C 3B1	189D028O10	C-TANT	16V 10μF-K
C 3B2	189D058O30	C-TANT	16V 3.3μF-K
C 443	189D028O60	C-TANT	35V 2.2μF-K
C 444	189D028O40	C-TANT	35V 0.47μF-K
C 453	189D075O70	C-TANT	35V 10μF-K
C 481	189P071O50	C-M-PP	200V 0.33μF-J
C 482	189P081O20	C-M-PP	200V 0.22μF-J
C 546	172P171O50	C-M-PP	1600V 0.015μF-J
C 547	189P077O30	C-M-PP	400V 0.33μF-J
C 548	172P171O40	C-M-PP	1600V 0.012μF-J
C 570	189P081O50	C-M-PP	200V 0.1μF-J
C 5A0	189P077O40	C-M-PP	400V 0.39μF-J
C 5013	172P171O00	C-M-PP	1600V 5600pF-J

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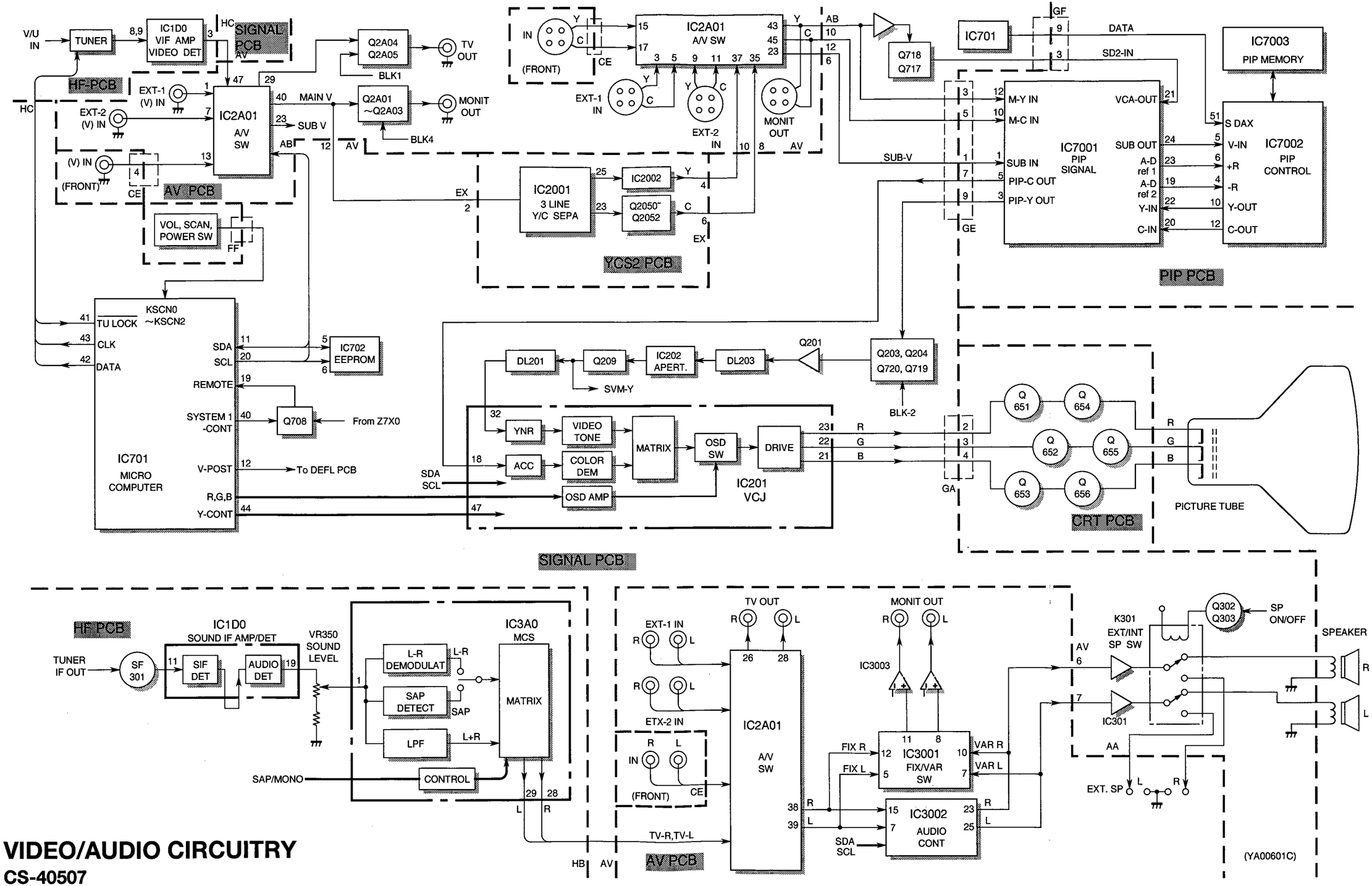
SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
C 703	149D811O30	CR-MULTIPLE	50V 10000PFX4
C 705	149D811O30	CR-MULTIPLE	50V 10000PFX4
C 706	149D811O30	CR-MULTIPLE	50V 10000PFX4
C 735	149D811O30	CR-MULTIPLE	50V 10000PFX4
C 736	149D811O30	CR-MULTIPLE	50V 10000PFX4
C 737	149D811O30	CR-MULTIPLE	50V 10000PFX4
C 901	189P033O50	C-PP-AC	AC125V 0.1μF-M
C 902	189P033O50	C-PP-AC	AC125V 0.1μF-M
C 905	189P060O60	CERAMIC CAPACITOR	E AC250V 2200pF-Z
C 906	189P060O60	CERAMIC CAPACITOR	E AC250V 2200pF-Z
C 907	185D074O10	ELECTROLYTIC-C	H180V 820μF-M 105C
C 918	189P033O60	C-PP-AC	AC125V 0.01μF-M
C 919	189P033O80	C-PP-AC	AC125 0.022μF-M
C 929	185D063O30	ELECTROLYTIC-C	H180V 820μF-M 105C
C 949	185D065O30	ELECTROLYTIC-C	H35V 4700μF-M 105C
C 951	189P033O50	C-PP-AC	AC125V 0.1μF-M
C 954	189P033O50	C-PP-AC	AC125V 0.1μF-M
C 985	185D065O30	ELECTROLYTIC-C	H35V 4700μF-M 105C
CR971	149P008O10	CR-MULTIPLE	470PF&3.6μF-K
VC7001	202P109O30	TRIMMER CAPACITOR	5.5pF-30pF
		SWITCHES	
S 571	431C059O20	SLIDE SWITCH	2-3
S 7600	432P100O20	KEY BOARD SWITCH	1-1 H=5
S 7601	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7602	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7603	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7604	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7605	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7606	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7608	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7609	431C074O70	SLIDE SWITCH	2-3 L=2
S 7610	431C074O10	SLIDE SWITCH	
S 7611	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7612	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7613	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7614	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7615	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7616	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
S 7617	432P100O10	KEY BOARD SWITCH	1-1 H=4.3
TU1T0	295P403O10	ANTENNA SWITCH	WITH RELAY
		MISCELLANEOUS	
	338P035O30	CPM ASSY	37.5
	641D758O10	WEDGE	ELASLEN NF-01
AG5000	224D019O40	AIR GAP	2KV
F 901	283D060O30	FUSE	S6.3A
J 2X1	440C231O10	JACK BOARD	PINX3 & SX1
J 601	449C106O20	SOCKET CRT	
K 301	287P060O20	RELAY POWER	
K 901	287P049O30	RELAY POWER	DJ12D-0(M)-L
K 902	287P049O30	RELAY POWER	DJ12D-0(M)-L
PC901	268P058O10	PHOTO COUPLER	ON3131-R
PC902	268P058O10	PHOTO COUPLER	ON3131-R
PJ2A1	440C186O20	JACK BOARD	PINX6 & SX2
PJ2A2	440C230O80	PIN JACK BOARD	6P
PJ7A1	451C119O20	JACK HEADPHONE	BLACK

[40507C] : CS-40507C

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
RV901	265P100O10	VARISTOR	ERZV10D271
SP3001	440C189O10	TERMINAL SPEAKER	(+)X2&(-)X2
* TU1T1	295P269O30	TUNER	ENV-568F9G3
X 601	285P029O50	CRYSTAL RESONATOR	3.5795MHz
X 702	285P039O20	CRYSTAL RESONATOR	8.00MHz
X 7001	285P069O20	CRYSTAL RESONATOR	HC-49/U
Z 501	283P030O90	FUSE	SSFR 4A
Z 7600	939P529O10	PREAMP UNIT	GP1U783R
Z 901	283P039O30	FUSE	SSFR 8A
		PRINTED CIRCUIT BOARD ASSY'S	
*	930B673O01	AV PCB ASSY	
*	930C933O01	CONTROL PCB ASSY	
*	930C722O04	CRT/SVM PCB ASSY	
*	930C710O07	DBF PCB ASSY	
*	930C819O01	HF PCB ASSY	
*	930C935O01	JACK PCB ASSY	
*	930C812O02	PIP PCB ASSY	
*	930C820O01	POWER PCB ASSY	
*	930C934O01	PREAMP PCB ASSY	
*	930B674O06	SIGNAL PCB ASSY	
*	930C846O01	YCS2 PCB ASSY	
		MECHANICAL PARTS	
	669D220O30	SCREW	3X10 46LA005
	669D221O30	SCREW	4X10 46LA005
	669D221O40	SCREW	4X12 46LA005
	669D221O60	SCREW	4X16 46LA005
	669D212O10	SCREW	3X12
	669D212O30	SCREW	3X16
	669D220O20	SCREW	3X8 46LA005
	669D220O40	SCREW	3X12 46LA005
		COSMETIC PARTS	
	242C957O20	AC POWER CORD	
	750A107O20	OPERATION DOOR ASSY	
	700C212O50	BACK COVER ASSY	[40507]
	700C212O40	BACK COVER ASSY	[40507C]
	750A115O10	FRONT CABINET ASSY	
	622D485O10	BASE CAP	
	622D486O10	GAM CAP	
	641D173O10	CLIP	AC-POWER-CORD
	750A106O10	TERMINAL DOOR	
	752C050O10	SPEAKER GRILLE	750A115-10(18+
	754C022O40	POWER KNOB	750A115-10(14+
	734D578O10	KNOB SLIDE	
	701B330O10	DOOR PANEL	
	761A105O60	TERMINAL BOARD	(YA)
	750A156O10	TOP BOARD	
SP391	926P030O10	SPEAKER SYSTEM	
SP392	926P030O10	SPEAKER SYSTEM	
		PACKING PARTS AND ACCESSORY	
	242D266O40	CABLE	PLUG-PLUG(3.5)
	803A413O10	PACKING CUSHION	[40507]
	871C908O40	INSTRUCTION BOOK	[40507]

[40507] : CS-40507 [40507C] : CS-40507C

SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION		SYMBOL No.	PARTS No.	PARTS NAME	DESCRIPTION
	871C934O10	INSTRUCTION BOOK		[40507C]				
	831D191O40	PACKING BAG		[40507]				
	831D226O60	PACKING BAG		[40507]				
	801C290O10	PACKING CASE		[40507]				
*	290P034O20	REMOTE HAND UNIT						
	OTHER CRITICAL COMPONENTS							
C 5X1	181P187O00	C-ELECTROLYTIC	04W 100V 1μF-M 105C					
R 1B7	103P330O10	R-CARBON-25	1/4W 10Ω-J					
R 1C0	103P330O10	R-CARBON-25	1/4W 10Ω-J					
R 5K0	103P338O60	R-CARBON-25	1/4W 3.3Ω-J					
R 5K1	103P464O80	R-METAL	1/4W 9.1kΩ-F					
R 5X1	103P467O60	R-METAL	1/4W 130kΩ-F					
R 5Y01	103P142O60	R-CARBON	1/2W 1.2kΩ-J					
R 913	109D036O30	R-COMPOSITION	1/2W 1.0MΩ-K					
R 928	109D036O30	R-COMPOSITION	1/2W 1.0MΩ-K					

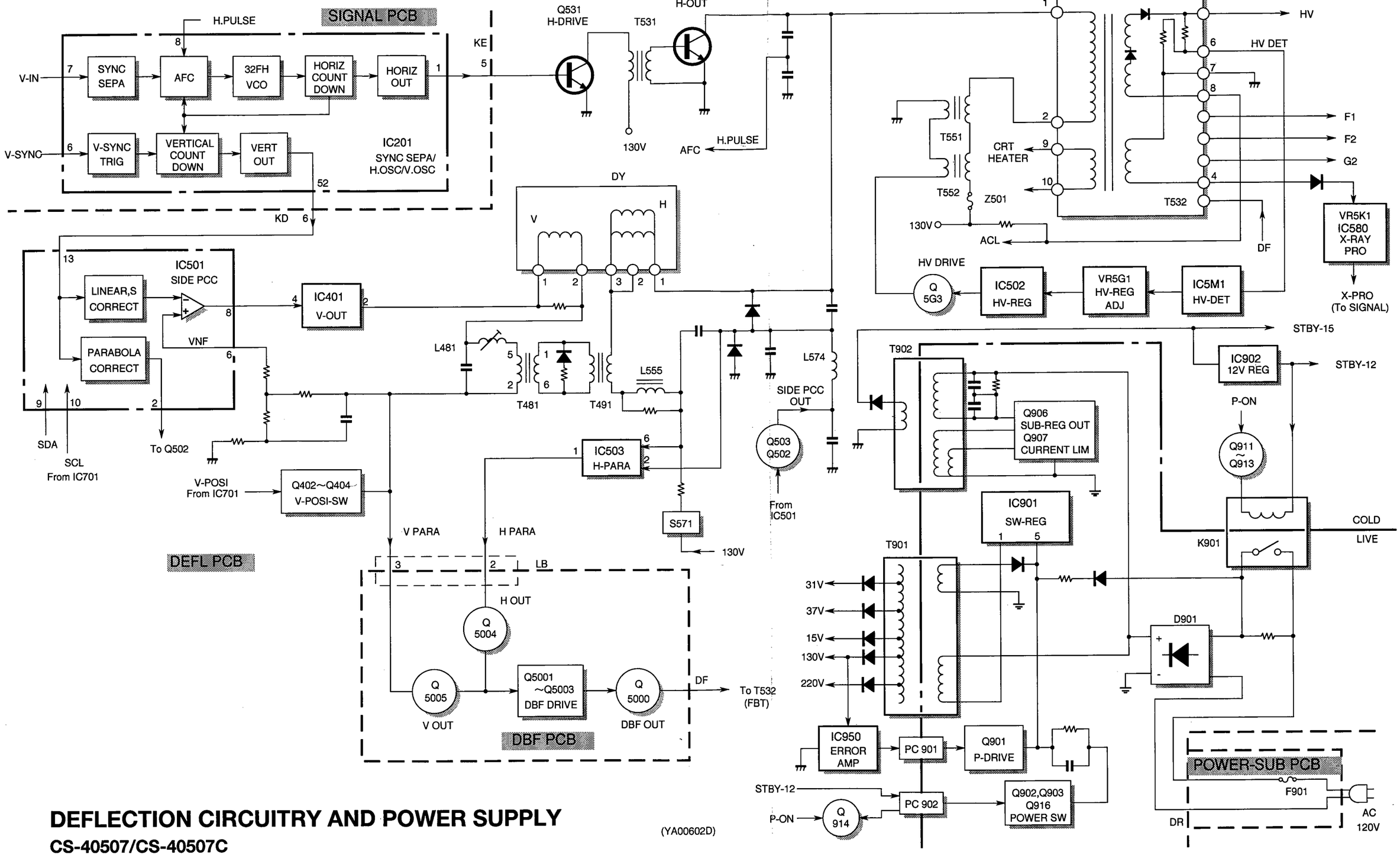


VIDEO/AUDIO CIRCUITRY

CS-40507
CS-40507C

DEFLECTION CIRCUITRY AND POWER SUPPLY

CS-40507/CS-40507C



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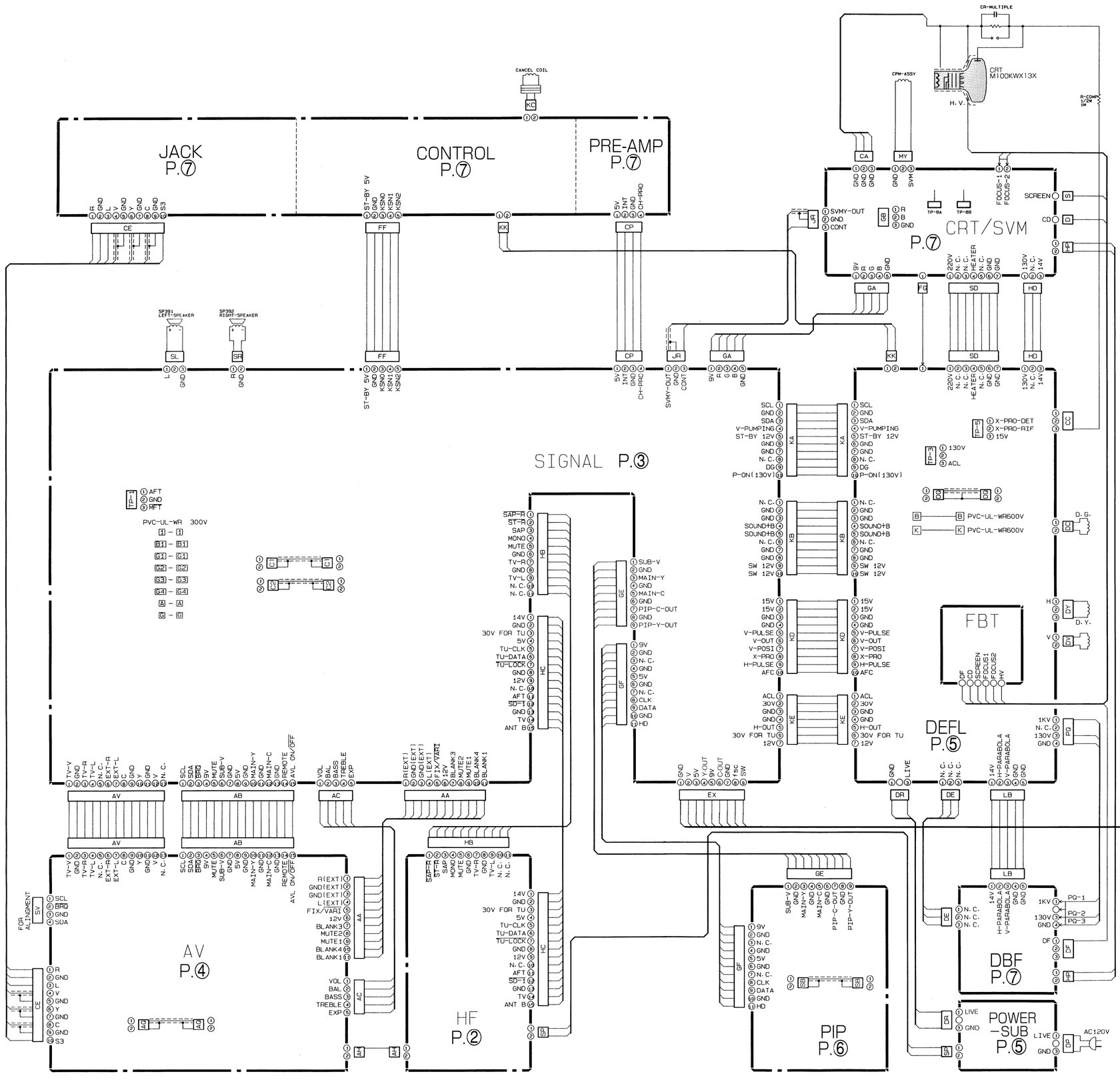


CONNECTOR / PCB	SIGNAL	DEFL	AV	Y/C	PIP	CRT/SVM	DBF	HF	POWER-SUB	AV-FRONT	CONTROL	PRE AMP	OTHERS	Ref
AA	JL		JL											
AB	JL		JL											
AC	S		E-H											
AH			V-H					V-H						USE 1007 AWG22(300V)
AV	JL		JL											
CA						E							*	*COATING EARTH
CC		E											*	*COATING EARTH
CE		E-H								E-H				USE SHIELD LINE.
CP	S											2		#26
D						O-							*	*FBT
DC		G											*	*DG COIL
DE		JL					JL							
DF							V						*	*FBT
DP								V					*	*AC COAD
DQ		2/2												USE SHIELD LINE.
DR		V						V						USE PVC UL-600V Pipe
DV		G1											*	*DY-V-COIL
DX		G											*	*DY-H-COIL
FF	S										S-H			#26 6Pins
GA	S					S								#26
GB						E-H								TEST-PIN
GE	JL					JL								
GF	JL					JL								
HB	JL							JL						
HC	JL							JL						
HD		S				S								
HP						S	S							
JR	S					S								#26
KA	FJ	FJ												
KB	FJ	FJ												
KC											2		*	*CANCEL COIL
KD	FJ	FJ												
KE	FJ	FJ												
KK		S									S			3Pins
LB		JL					JL							
MY						S							*	*CPM-ASSY
FG		O-				G								
PQ		V					O-							
S						O-							*	*FBT
SD		S				S								
SP								V		V				USE 1007 AWG22(300V)
SL	S												*	LEFT-SPEAKER
SR	S												*	RIGHT-SPEAKER
SV			E											TEST-PIN
TP-1	E													TEST-PIN
TP-3		E												TEST-PIN
TP-5		E												TEST-PIN
TP-HV		E												NO USE
EX	JL			JL										
AQ			2/2											USE SHIELD LINE.
C1	2/2													USE SHIELD LINE
C2	2/2													USE SHIELD LINE
SB	2/2						2/2							USE SHIELD LINE
BW											S	S		

SCHEMATIC DIAGRAM
MODELS : CS-40507
CS-40507C

• NOTE

1. DC voltages were measured from points indicated to the circuit ground with a high-Z voltmeter.
2. Waveforms were taken with standard colour bar signal.
3. TP6A, etc. show Test Points.
4. CAPACITORS

Value	Not indicated	PF, for numbers more than 1 μF, for numbers less than 1
Dielectric Strength	Not indicated :50V	
Tolerance	Not indicated ±±10%	No Tolerance is indicated for electrolytic capacitors and ±20%
	G=±2% P=+100% Q=+30% C=±0.25PF J=±5% -0% -10% D=±0.5PF K=±10% Z=+80% T=+200% F=±1PF M=±20% -20% -0% G=±2PF	
Sort I Parts except for chips	Not indicated : Ceramic capacitor (MF) : Polyester capacitor (PP) : Polypropylene film capacitor (ALM) : Aluminus electrolytic capacitor (TF) : Twin film capacitor (SC) : Semiconductor ceramic capacitor (MP) : Metalized paper (MPP) : Metalized plastic film capacitor (MMF) : Metalized polyester capacitor (MF PP) : Polyester polypropylene film capacitor (PS) : Styrol capacitor (TAN or TANT) : Tantalum capacitor (BP or NP) : Electrolytic capacitor : Non polarized electrolytic capacitor	
II Chips	Not indicated : Ceramic capacitor chip (BP or NP) : Electrolytic capacitor : Non polarized electrolytic capacitor chip	
Characteristic (only ceramic capacitor)	Not indicated : F or B(high dielectric percentage) CH,SL,etc. : Temperature compensating types	

5. Resistors

Value	Not indicated = Ω K = kΩ(1000Ω) M = MΩ(1000kΩ)	
Wattage	Parts except for chips	Not indicated = 1/4W or 1/6W
	Chips	Not indicated = 1/10W
Tolerance	Not indicated ±±5% D=±0.5% J=±5% F=±1% K=±10%	
Short I Parts except for chips	Not indicated : Carbon resistor (S) : Fixed composition resistor (MB) : Metal oxide film resistor(type B) (CE) : Cemented resister (W) : Wire wound resister (M) : Metal film resister (MPC) : Metal plate cement resistor (ML) : Metal liner resister	
II Chip	Not indicated : Chip resistor	

6. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.

SPECIFIC SYMBOL

Zener Diode	Crystal unit
Varicap	Air Gap
Posistor	Part(resistor) attached on the copper-foil side of PCB
Thermistor	Ceramic filter
Fusible Resistor	

LES ELEMENTS CONSTITUTIFS HACHURES ONT DES CARACTERISTIQUES SPECIALES IMPORTANTES A LA SECURITE. AVANT DE REMPLACER L'UN OU L'AUTRE DE CES ELEMENTS, LIRE ATTENTIVEMENT LA NOTICE DE SECURITE D'APPAREIL DANS LE MANUEL DE SERVICE.
NE PAS NUIRE A LA SECURITE DES RECEPTEURS PAR SERVICE NON APPROPRIE.

AVERTISSEMENT AU DEPANNEUR
PRECAUTIONS CONTRE LA RADIATION AUX RAYONS X LE PRESENT APPAREIL COMPORTE DES PIECES IMPORTANTES ELECTROMECANIQUES POUR LA PROTECTION CONTRE LA RADIATION AUX RAYONS X. POUR EVITER TOUTE EXPOSITION EVENTUELLE A LA RADIATION AUX RAYONS X, PRENDRE LES MESURES DE PROTECTION AU COURS DU DEPANNAGE. VOIR LES INSTRUCTIONS D'ENTRETIEN POUR LES PIECES DE REMPLACEMENT SPECIFIEES ET LES REGLAGES D'ENTRETIEN.

SHADED COMPONENTS HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS READ CAREFULLY THE PRODUCT SAFETY NOTICE IN THE SERVICE MANUAL. DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

SERVICE MAN WARNING
X-RADIATION PRECAUTION
THIS PRODUCT INCLUDES CRITICAL ELECTRICAL AND MECHANICAL PARTS ESSENTIAL FOR X-RADIATION PROTECTION.
TO AVOID POSSIBLE EXPOSURE TO X-RADIATION TAKE X-RADIATION PROTECTIVE MEASURES FOR PERSONNEL DURING SERVICING.
SEE SERVICE INSTRUCTIONS FOR SPECIFIED REPLACEMENT PARTS AND SERVICE ADJUSTMENTS.

PCB-HF

PCB-POWER-SUB SP

PCB-AV AH

TU1T0 2RF SW-ENP0628

TU1T1

IC1D0 M51366SP VSIF

IC3A0 μPC1871CU

IC1V0 L78M09

IC1V1 AN78N20

Q1T1 2SA933S-R SW

Q1T0 DTC124ES SW

Q1M0 2SC1740S-R VIDEO-BUFFER-1

Q1M1 2SA933S-R VIDEO-BUFFER-2

Q1F0 2SC1740S-R AFT-BUFFER

Q3D0 2SC1906 SIF-AMP

Q1A0 2SC383 BUFFER

Q1A1 2SC383 BUFFER

Q1A2 2SC383 AMP

Q1A3 2SC383 BUFFER

Q1S0 2SA933S-R SYNC-DET

Q1S1 2SC1740S-R SYNC-DET-SW

IC3A0 μPC1871CU MCS

PCB-SIGNAL HC

PCB-SIGNAL HB

PCB-SIGNAL

TO SPEAKER SL / TO SPEAKER SR

PCB-H-F HC — HC: 15V, GND, 30V, 5V, TU-CLK, TU-DATA, TU-DOC, GND, 12V, ANT, SDA, SCL, TV-V, ANT-IN

PCB-H-F HB — HB: SAP-R, ST-R, SAP, MONO, MUTE1, GND, TV-R, GND, TV-L, N.C., N.C.

PCB-PRE-AMP CP — CP: ST-5V, INT, CH-PRO

PCB-CONTROL FF — FF: ST-5V, VS-GND, VS-CNT, VS-GND, N.C.

(TEST-PIN) TP-1

PCB-A/V (AC): VOL, BAL, BASS, TREBLE, EXP

PCB-A/V (AA): R(EXT), GND(EXT), L(EXT), F/X-VA, 12V, BLANK3, MUTE2, MUTE1, BLANK4, BLANK1

PCB-A/V (AV): TV-V, GND, TV-R, TV-L, N.C., EXT-R, EXT-L, C, V, V, N.C.

PCB-A/V (AB): SCL, SDA, BRG, 9V, MUTE, SVR-V, GND, 5V, MAIN-Y, MAIN-C, REMOCON, AVC

PCB-VSS 2 (EX): GND, V, 5V, V-OUT, 9V, C-OUT, GND, fsc, SW, N.C.

NO USE (35" models only.)

Q5A1:S-H-BUFFER 1 2SC2603-F/2SC1740S-S
Q5A2:S-H-INV 1 2SC2603-F/2SC1740S-S
Q5A3:S-H-INV 2 2SA1115-F/2SA933S-S
Q5A4:S-H-DL 2SA1115-F/2SA933S-S
Q5A5:S-H-OUT 2SC2603-F/2SC1740S-S

IC301 LA4282 AUDIO-AMP

Q301 2SC3878B

Q321 2SC2603-E-F / 2SC1740S-R,S

Q302 Q303 Q304

IC702 EEPROM

Q711 AC-OFF DET1

Q710 AC-OFF DET2

Q723

Q8A2 SVM OFF SW-2

IC704 μPC78D5H 5V-REG

Q703

Q704

Q702 2SC2603-G V-SYNC

Q701 H-SYNC

Q706

Q707 SYSTEM RMT BUFFER1

Q708 SYSTEM RMT SW

Q706 SYSTEM RMT BUFFER2

IC703 PST520E RESET

IC701 M37266-XXX μ-CON

(NO USE)

Q7K1 Q7K2 Q7K3

Q208 SCP BUFFER

Q718 SCP DETECTOR1

Q717 SCP DETECTOR2

Q481 V-SYNC BUFFER

Q712 Q713

Q8A3 SVM-Y BUFFER

Q8A1 SVM OFF-SW1

Q605 W-PEAK BUFFER

Q205 Y-BUFFER2

Q209 Y-BUFFER1

Q719 Q720 Q203 Q204 Q207 Q206

Q715

IC201 MSD300BSP VCJ

Q5C3 SIGNAL DET

Q607 POWER OFF SW

Q5C1 SPOT KILLER

Q5C2 MENU CONT SW

Q604 FSC-BUFFER

Q601 FSC AMP

Q714 SVM OFF-SW

Q201 Y-AFT-IN

Q202 Y-DL-IN

IC202 PA0030 APERTURE ENHANCEMENT

IC2A1 μPC7812H 12V Reg

IC2A2 μPC8M09AHF 9V Reg

IC2A3 SI-3050C 5V Reg

Q609 P-C-AMP2

Q608 P-C-AMP1

Q716 PSC-B78B C-BLANKING

Q603

Q722 HD-BUFFER2

Q721 HD-BUFFER1

Q724 HD OFF SW

Q5A6 C-BUFFER

Q510 C-BUFFER

Q2Z1

J47	—
J282	USE
J283	USE
R2Z1	USE
R2Z1	10K

⊛SEE PAGE ⑥ FOR IC BLOCK DIAGRAM.

	R213	R6008	IC701	C771	IC702	R609	R610
CS-40507 / CS-40507C	F-150	15K	A67SP	—	24C02A#P/XL24C02P	22	470

PCB-PIP GF / PCB-PIP GE

PCB-DEFL KE / PCB-DEFL KD / PCB-DEFL KB / PCB-DEFL KA

PCB-CRT/SW GA / PCB-CRT/SW GB

②5.5Vp-p(H)
③0.4Vp-p(H)
④0.4Vp-p(H)
⑤5.2Vp-p(H)
⑥3.8Vp-p(H)
⑦3.6Vp-p(H)
⑧4.0Vp-p(H)

CS-40507
CS-40507C

PCB-AV

PCB-JACK CE

CE

EXT-1

EXT-2

MONITOR-OUT

TUNER-OUT

IC2A01 CXA1545S AUDIO/VIDEO SW

IC2A01 CXA1545S

IC3002 M5218AL

IC3004 BA8221AN

IC3001 LA7222 FIX/VAR SW

IC3002 LA7953

IC3002 LA7953 AUDIO -CONTROLLER

Q2A10 Y/C/BLANK-SW DTC124ES /UN4212

Q2A11 TUNER-BLANK-SW DTC124ES/UN4212

Q2A01 MONITOR BLANK-SW1 DTC124ES /UN4212

Q2A02 MONITOR BLANK -SW2

Q2A04 TUNER BLANK -SW2

Q3007 2SC2878-B

Q3008 2SC2878-B

Q3005 2SC2878B

Q3006 2SC2878B

Q3003 2SC3065-F/G

Q3002 2SC3065-F/G

Q3001 2SC3065-F/G

Q3012

Q3009

Q3011

Q3004

Q3010

SP3001 EXTERNAL SPEAKER

IPJ741 SYSTEM-RMT-OUT

PCB-HF AH

CHROMA-MAIN

YAWAJ

COMP.

COMP.(MAIN)

If not specified, TRANSISTORS are 2SC2603-E,F/2SC1740S-R,S (K) NPN TYPE

2SA1115-E,F/2SA933S-R,S (K) PNP TYPE

AC PCB-SIGNAL AC

AA PCB-SIGNAL AA

AV PCB-SIGNAL AV

AB PCB-SIGNAL AB

SV FOR IC ALIGNMENT

CS-40507
CS-40507C

PCB-DEFL

PCB-DBF ← DB (NC NC NC)

PCB-DBF LB ← LB (15V HI-PARABOLA V-PARABOLA GND GND)

CRT-LUG ← CC

PCB-SIGNAL KE ← KE (ACL BT30V GND GND H-OUT N.C.)

PCB-SIGNAL KD ← KD (15V GND GND V-PULSE V-IN V-POSI X-PRO H-PULSE AFC)

PCB-SIGNAL KB ← KB (N.C. AUDIO-GND AUDIO-GND AUDIO-B AUDIO-A N.C. GND GND N.C. N.C.)

PCB-SIGNAL KA ← KA (SCL GND SDA V-P V-BLK ST-BY 12V ST-BY 15V GND N.C. DG P-ON)

IC503 M52234L H-PARA

IC501 TA8739P SIDE-PCC

IC401 LA7833-S V-OUT

IC902 μPC7812H 12V REG

IC903 μPC7812H

IC901 STR-M6511 SW-REG

IC501 TA8739P

IC590 UPC3933C X-RAY PRO

IC950 SE130N ERROR AMP

Q290 2SA1115-E.F /2SA933-R.S V-PROTECT-1

Q291 2SC2603-G /2SC1740S-E V-PROTECT-2

Q211 2SA933S /2SA1115-E.F ACL-AMP

Q504 2SC2274-F

Q502 2SC1740S-R.S /2SC3311A-R.S SIDE-PCC-DRIVE

Q503 2SC2073-B.C /2SC2168-D.Y /2SD396A-D.E SIDE-PCC-OUT

Q515 2SC2603-G /2SC1740S-E

Q531 2SK855 H-DRIVE

Q532 2SD1881 H-OUT

Q931 2SC1826-Y 30V-HEG

Q402 2SC2655-O.Y V-POSI-SW-DRIVE

Q403 2SA673A V-POSI-SW-1

Q404 2SC2655-O.Y V-POSI-SW-2

Q911 2SC2603-G /2SC1740S-E RELY-DRIVE-1

Q912 2SC2603-G /2SC1740S-E RELY-DRIVE-2

Q913 2SC2603-G/2SC1740S-E RELY-DRIVE-3

Q905 2SC1740S-E/2SC2603-G

Q940 2SC2603-G /2SC1740S-E DG-SW

Q902 2SA1115-E.F /2SA933S-R.S POWER-SW-2

Q903 2SA1115-E.F /2SA933S-R.S POWER-SW-3

Q906 2SC4004 SUB-REG-OUT

Q907 2SC2236-O.Y CURRENT -LIMIT

Q901 2SC2482 P-DRIVE

Q916 2SC2482 POWER-SW-4

Q914 2SC1740S-E /2SC2603-G POWER-SW-1

Q211 2SA933S /2SA1115-E.F ACL-AMP

Ⓜ 55Vp-p(V)

Ⓟ 1.1Vp-p(V)

Ⓢ 200Vp-p(H)

Ⓢ 5.0Vp-p(H)

PCB-CONTROL KK

PCB-POWER/SUB DR

PCB-CRT/SVM SD

PCB-DBF PQ

PCB-CRT/SVM HD

PCB-DEFL DR

PCB-HF SP

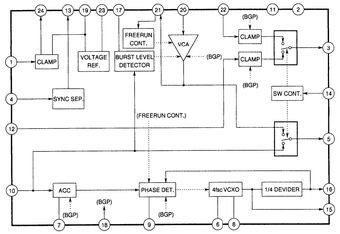
TP3 (X-PRO-DET, X-PRO-REF, 15V)

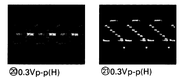
ALL ELECTROLYTIC CAPACITORS HAVING DIAMETER OF MORE THAN 10mm ARE EXPLOSION PROTECTION TYPE.

CS-40507
CS-40507C

PCB-PIP

IC7001 M52694P

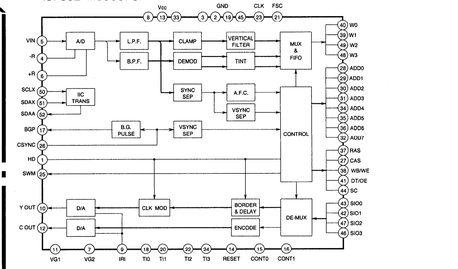




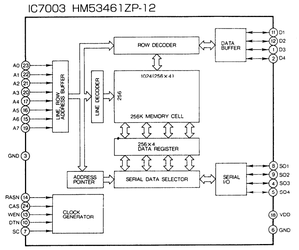
⑳0.3Vp-p(H)

㉑0.3Vp-p(H)

IC7002 M65607SP

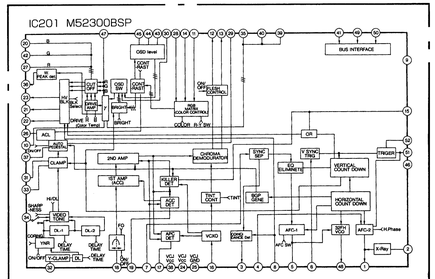


IC7003 HM53461ZP-12



〈IC block diagrams of PCB-SIGNAL〉

IC201 M52300BSP


OSD level
BUS INTERFACE
R,G,B INT
OSD BLK
OSD OUT
OSD BLK
OSD OUT
OSD BLK
OSD OU

TO CRT'S COATING EARTH

PCB-CRT/SVM

J601 CRT-Socket

TO PCB-DEFL

TO F.B.T

PCB-DBF HP

PCB-DEFL SD

PCB-SIGNAL GA

PCB-DEFL HD

CPM-ASSY

PCB-SIGNAL JR

PCB-SIGNAL EX

** L651-L657 : 105° C

PCB-DBF

Q5000 2SC4636 DBF OUT PUT

Q5001 2SC4636 DBF DRIVE-2

Q5002 2SC2603-G DBF DRIVE

Q5003 2SA1115-F 2SA1175-E DBF DRIVE

Q5004 2SC2603-F.G /2SC2785-E.K HORIZONTAL OUT PUT

Q5005 2SC2603-G /2SC2785-E.K VERTICAL OUT PUT

PCB-DEFL

PCB-DEFL LB

PCB-CRT/SVM FBT(T5320F) HP

PCB-CONTROL

PCB-SIGNAL FF

PCB-DEFL KK

KC

CP

PCB-YCS 2

IC2001 TC9089AN 3 Line Y/C Separator

IC2002 MM1031XS Y AMP

PCB-SIGNAL EX

PCB-PRE-AMP

PCB-SIGNAL CP

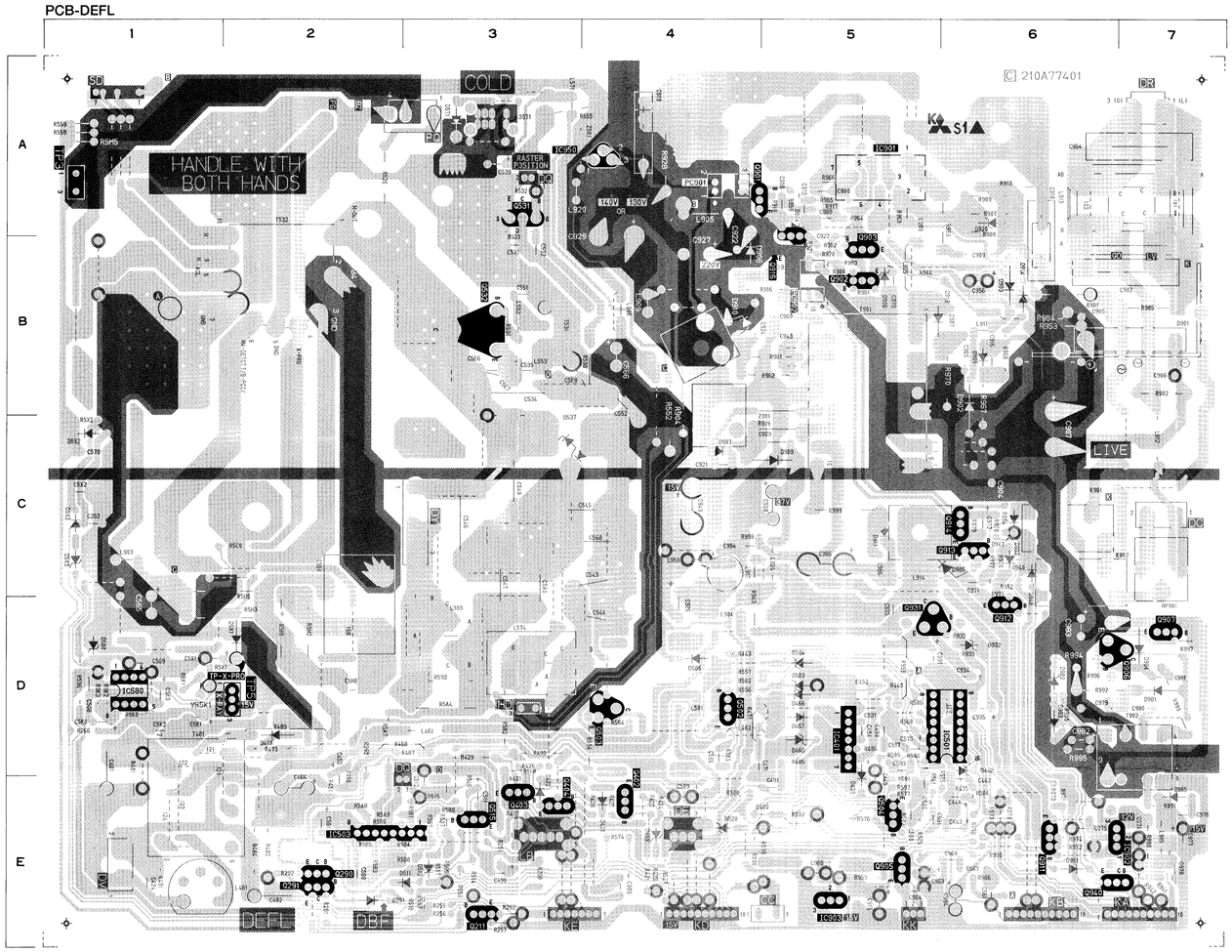
PCB-JACK

PCB-AV CE

(S-H)

CS-40507
CS-40507C

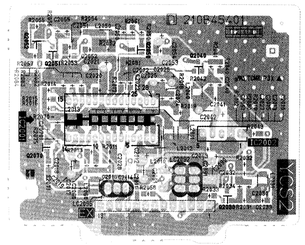
PCB-DEFL



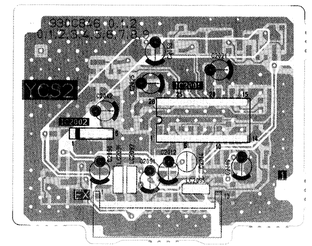
PCB-DEFL

SYMBOL NO.	ADDRESS
D251	E-2
D413	D-2
D421	E-4
D422	E-3
D433	E-5
D442	D-6
D466	D-5
D467	D-5
D468	D-5
D469	E-4
D511	E-3
D512	E-3
D520	E-4
D537	C-3
D552	C-1
D571	A-3
D580	D-1
D583	D-5
D584	D-5
D585	D-4
D5X1	D-2
D5X2	C-1
D5X3	C-1
D901	B-7
D902	B-6
D903	B-6
D904	A-5
D905	B-6
D906	B-5
D907	C-4
D908	B-4
D909	C-5
D910	B-4
D911	C-5
D914	B-6
D919	B-6
D920	A-6
D932	D-6
D947	C-6
D948	D-6
D951	E-6
D952	C-6
D981	D-7
D982	D-6
D983	D-6
D984	D-7
D985	E-7
D986	C-6
IC401	D-5
IC501	D-6
IC503	E-2
IC580	D-1
IC901	A-5
IC902	E-7
IC903	E-5
IC950	A-3
K901	C-6
K902	C-6
L461	D-3
L462	D-4
L481	E-2
L501	D-4
L533	B-3
L555	D-3
L571	A-3
L574	D-3
L904	D-4
L905	A-4
L906	B-4
L907	C-1
L908	B-4
L909	A-5
L911	B-6
L912	C-7
L913	A-6
L914	C-5
L915	E-7
L917	C-4
L920	A-4
L924	C-5
L925	B-5
PC901	A-4
PC902	B-5
Q211	E-3
Q290	E-2
Q291	E-2
Q402	E-4
Q403	E-3
Q404	E-3
Q502	D-4
Q503	D-4
Q504	E-5
Q515	E-3
Q531	A-3
Q532	B-3
Q901	A-4
Q902	B-5
Q903	B-5
Q905	E-5
Q906	D-7
Q907	D-7
Q911	E-6
Q912	D-6
Q913	C-6
Q914	C-6
Q916	B-5
Q931	D-5
Q940	E-6
RP901	D-7
S571	A-3
T481	D-1
T531	B-3
T532	A-2
T551	C-2
T901	B-5
T902	D-7
TP3	A-1
TP5	D-2
TPXPRO	D-2
VR5K1	D-1
Z501	A-4
Z901	C-5

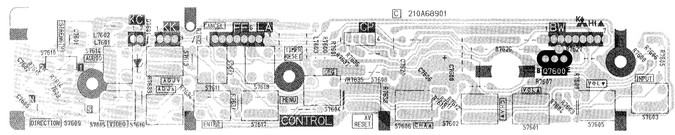
PCB-YCS 2 (SOLDER SIDE)



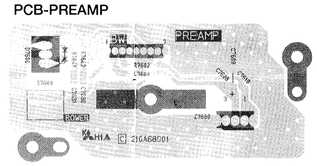
PCB-YCS 2 (COMPONENT SIDE)



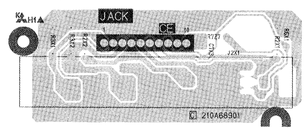
PCB-CONTROL



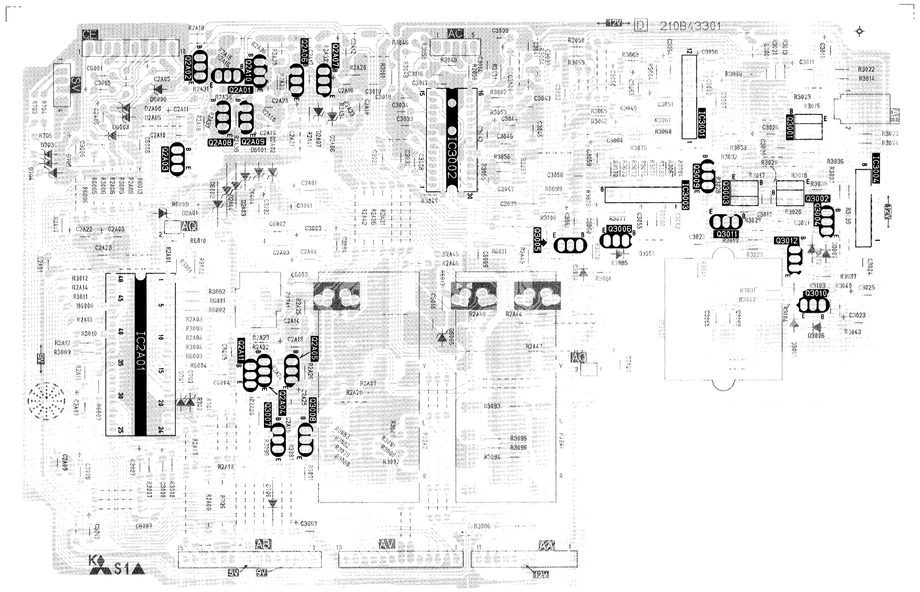
PCB-PREAMP



PCB-JACK



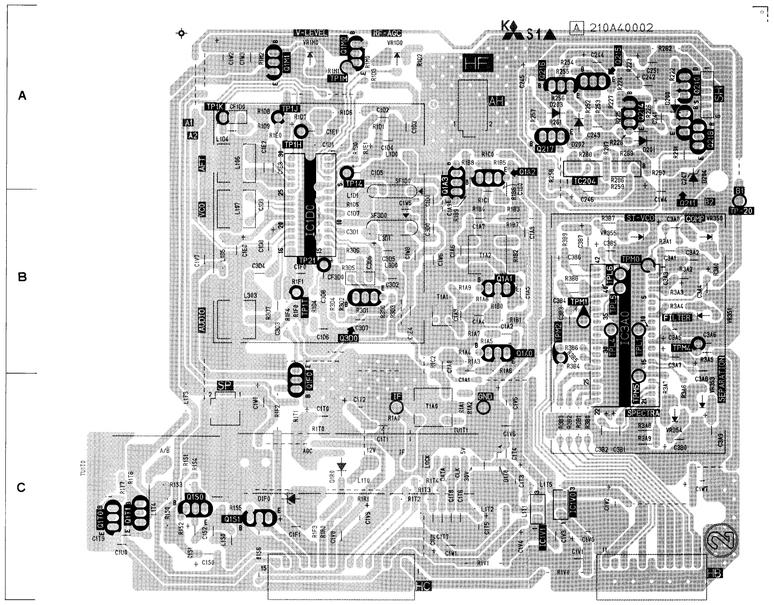
PCB-AV



PCB-AV

SYMBOL NO.	ADDRESS
D2A01	B-1
D2A02	A-2
D2A03	B-2
D2A04	B-2
D2A05	A-1
D2A06	A-2
D2A07	A-2
D2A08	A-1
D3001	B-5
D3002	B-5
D3004	B-4
D3005	B-4
D3006	B-5
D3007	B-5
D6001	A-2
D6002	B-2
D6003	A-1
D6004	B-2
D6005	B-3
D6006	A-1
D701	B-1
D702	B-1
D703	A-1
D704	A-1
D705	A-1
D706	C-2
IC2A01	B-1
IC3001	A-4
IC3002	A-3
IC3003	B-4
IC3004	A-5
L2A01	B-1
L3001	A-5
PJ2A1	C-4
PJ2A2	C-3
PJ7A1	B-2
Q2A01	A-2
Q2A02	A-2
Q2A03	A-1
Q2A04	C-2
Q2A05	B-2
Q2A06	A-2
Q2A07	A-2
Q2A08	A-2
Q2A09	A-2
Q2A10	A-2
Q2A11	B-2
Q3001	A-5
Q3002	B-5
Q3003	A-4
Q3004	B-5
Q3005	B-3
Q3006	B-4
Q3007	C-2
Q3008	C-2
Q3009	A-4
Q3010	B-5
Q3011	B-4
Q3012	B-5
SP3001	B-4

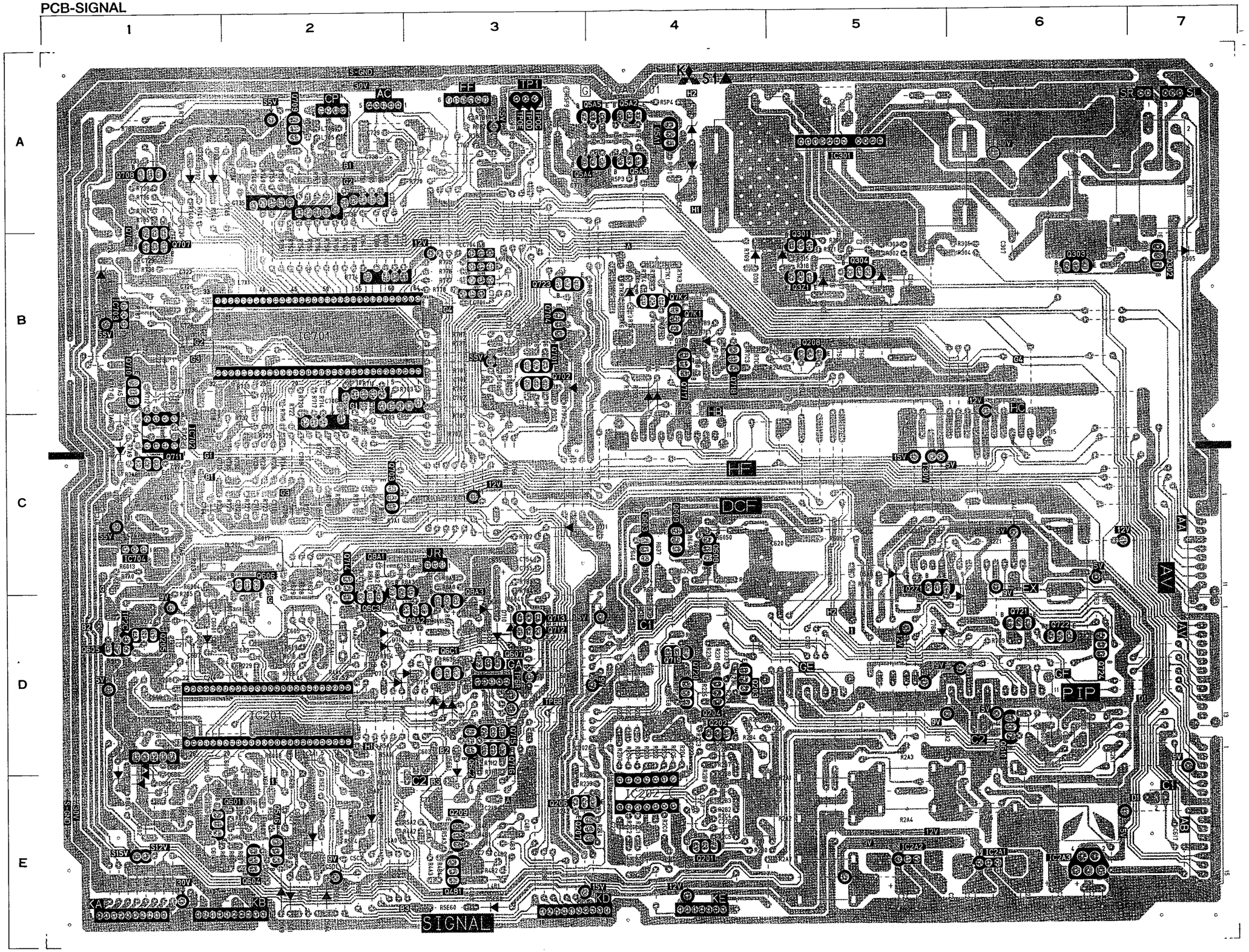
PCB-HF



PCB-HF

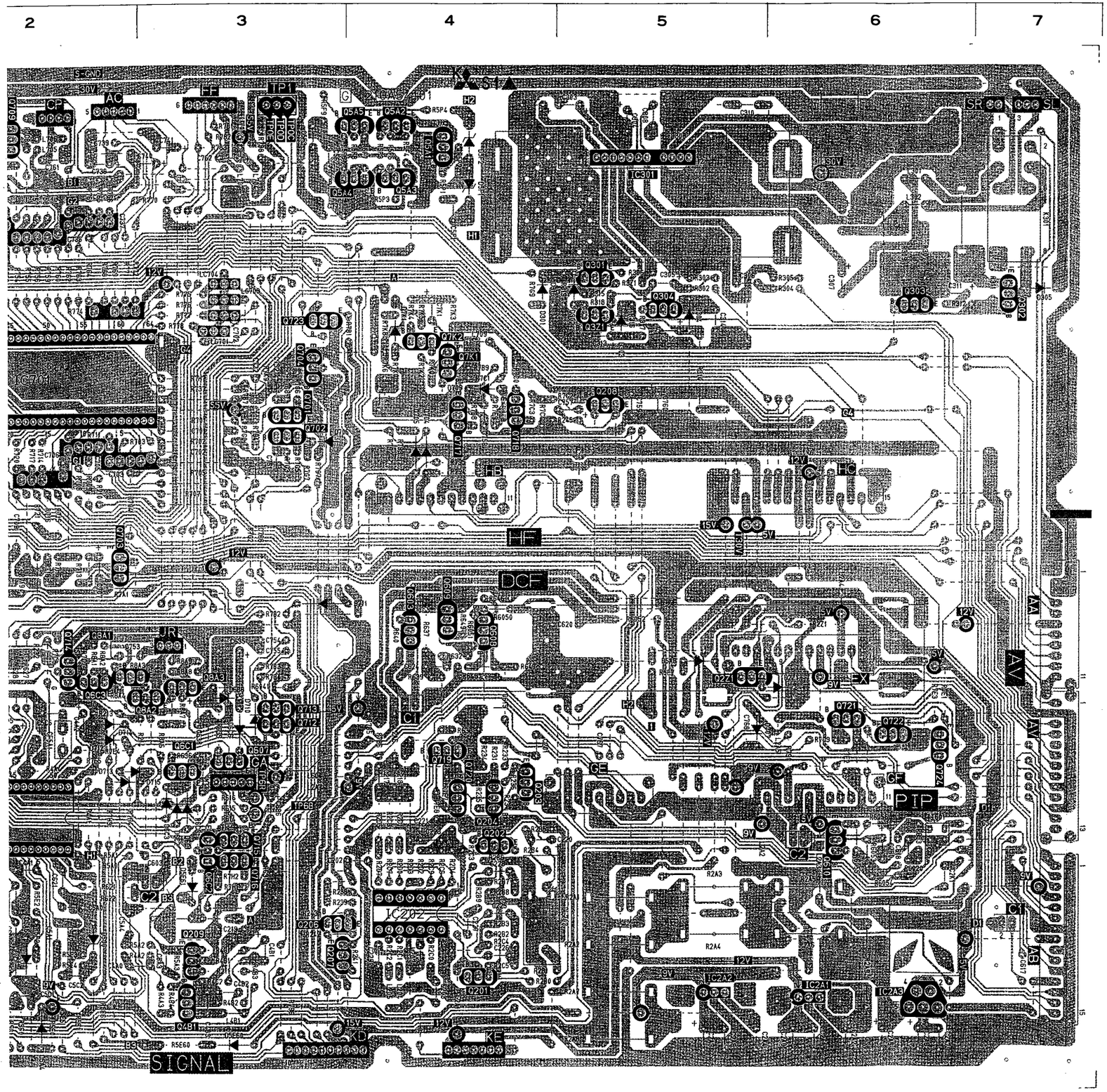
SYMBOL NO.	ADDRESS
CF1D0	A-2
CF3D0	B-2
D1F0	C-2
D1R0	C-2
D1T0	C-3
D200	A-4
D201	A-4
D202	A-3
D203	A-3
D204	A-4
IC1D0	B-2
IC1V0	C-3
IC1V1	C-3
IC204	A-3
IC3A0	B-4
L106	A-2
L107	B-2
L1D0	A-2
L1D1	B-2
L1D4	A-1
L1D5	B-1
L1S0	C-1
L1T0	C-2
L1T1	C-3
L1T2	C-3
L1T3	C-1
L1T4	C-1
L1T5	C-3
L303	B-2
L3D0	B-2
L3D1	B-2
Q1A0	B-3
Q1A1	B-3
Q1A2	A-3
Q1A3	A-3
Q1F0	C-2
Q1M0	A-2
Q1M1	A-2
Q1S0	C-1
Q1S1	C-2
Q1T0	C-1
Q1T0	C-1
Q210	A-4
Q211	B-4
Q214	A-4
Q215	A-4
Q216	A-3
Q217	A-3
Q218	A-4
Q3D0	B-2
SF1D0	A-2
SF3D0	B-2
T1A0	C-3
T1A1	B-3
T1A2	B-3
TU1T0	C-1
TU1T1	C-3
VR1D0	A-2
VR1M0	A-2
VR350	B-4
VR351	B-4
VR353	C-4
VR354	C-4
VR355	B-4

PCB-SIGNAL



PCB-SIGNAL

SYMBOL NO.	ADDRESS
CF5A1	D-2
D2Z1	D-6
D301	B-4
D302	B-5
D303	B-5
D304	B-5
D305	B-7
D500	E-2
D5A4	E-2
D5A5	E-2
D5A8	C-5
D5A9	E-2
D5B1	E-2
D5E60	E-3
D5E61	E-3
D5F1	A-4
D5F2	A-4
D6003	D-1
D6B4	E-1
D6B5	E-1
D6B6	E-1
D6B7	D-1
D6B8	D-3
D6C1	D-3
D6C2	D-3
D6C3	D-3
D6C6	D-3
D701	B-1
D702	A-1
D703	A-1
D704	B-4
D705	B-4
D706	B-3
D707	D-5
D708	C-1
D709	B-4
D710	D-3
D711	C-4
D712	D-2
D713	D-2
D714	D-2
D715	D-3
D716	C-1
D7K1	B-4
DL201	C-2
DL203	E-5
IC201	D-2
IC202	E-4
IC2A1	E-6
IC2A2	E-5
IC2A3	E-6
IC301	A-5
IC701	B-2
IC702	C-1
IC703	B-1
IC704	C-1



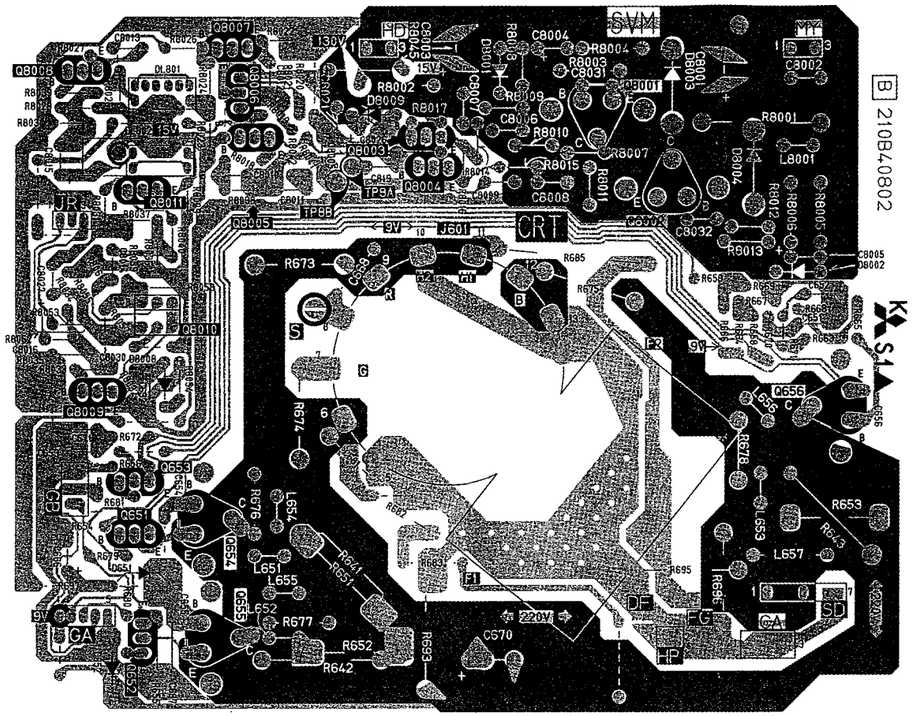
PCB-SIGNAL

SYMBOL NO.	ADDRESS
CF5A1	D-2
D2Z1	D-6
D301	B-4
D302	B-5
D303	B-5
D304	B-5
D305	B-7
D500	E-2
D5A4	E-2
D5A5	E-2
D5A8	C-5
D5A9	E-2
D5B1	E-2
D5E60	E-3
D5E61	E-3
D5F1	A-4
D5F2	A-4
D6003	D-1
D6B4	E-1
D6B5	E-1
D6B6	E-1
D6B7	D-1
D6B8	D-3
D6C1	D-3
D6C2	D-3
D6C3	D-3
D6C6	D-3
D701	B-1
D702	A-1
D703	A-1
D704	B-4
D705	B-4
D706	B-3
D707	D-5
D708	C-1
D709	B-4
D710	D-3
D711	C-4
D712	D-2
D713	D-2
D714	D-2
D715	D-3
D716	C-1
D7K1	B-4
DL201	C-2
DL203	E-5
IC201	D-2
IC202	E-4
IC2A1	E-6
IC2A2	E-5
IC2A3	E-6
IC301	A-5
IC701	B-2
IC702	C-1
IC703	B-1
IC704	C-1

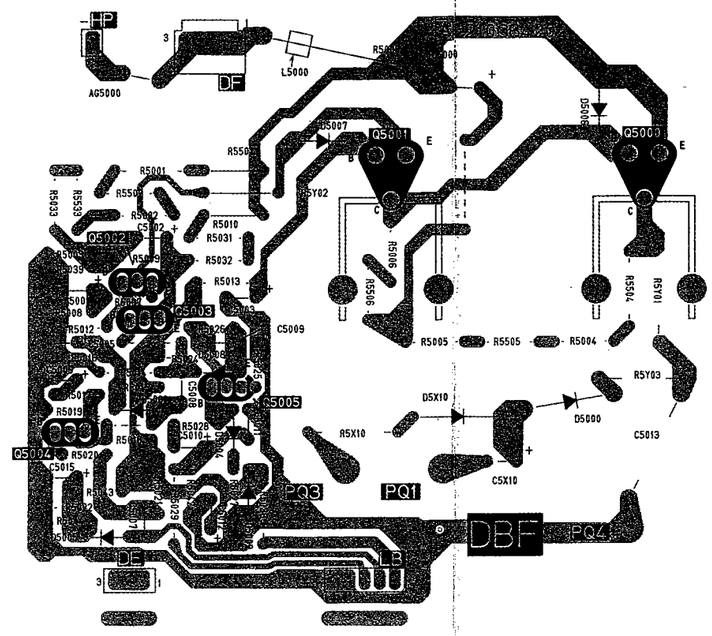
SYMBOL NO.	ADDRESS
K301	A-7
L203	E-4
L204	E-4
L205	E-4
L207	E-4
L2A1	E-4
L2A2	D-5
L2A3	D-6
L2A4	C-6
L2A5	D-6
L2A6	D-4
L2A7	D-3
L2A8	E-1
L301	A-6
L302	A-6
L4B1	E-3
L601	D-1
L602	E-2
L603	E-2
L604	D-3
L606	D-6
L610	E-2
L701	C-1
L702	C-1
L704	A-3
L705	A-2
L706	A-2
L707	A-3
L708	B-1
L709	B-4
L7K1	B-4
L7X1	B-2
LC701	B-3
LC702	B-3
LC703	B-3
LC704	B-3
Q201	E-4
Q202	D-4
Q203	D-4
Q204	D-4
Q205	D-1
Q206	E-3
Q207	E-3
Q208	B-5
Q209	E-3
Q2Z1	D-5
Q301	B-5
Q302	B-7
Q303	B-6
Q304	B-5
Q3Z1	B-5
Q4B1	E-3
Q5A1	A-4
Q5A2	A-4
Q5A3	A-4
Q5A4	A-4
Q5A5	A-4

SYMBOL NO.	ADDRESS
Q5A6	E-2
Q601	E-2
Q603	C-4
Q604	E-2
Q605	D-1
Q606	C-2
Q607	D-3
Q608	C-4
Q609	C-4
Q610	D-6
Q6C1	D-3
Q6C2	D-3
Q6C3	D-2
Q701	B-3
Q702	B-3
Q703	C-2
Q704	B-3
Q706	B-1
Q707	B-1
Q708	A-1
Q709	A-2
Q710	B-1
Q711	C-1
Q712	D-3
Q713	D-3
Q714	C-2
Q715	D-3
Q716	D-3
Q717	B-4
Q718	B-4
Q719	D-4
Q720	D-4
Q721	D-6
Q722	D-6
Q723	B-3
Q724	D-6
Q7K1	B-4
Q7K2	B-4
Q8A1	C-2
Q8A2	D-3
Q8A3	D-3
T601	D-6
TP0C	A-3
TP0D	A-3
TP0E	A-3
TP1	A-3
TP2C	D-1
TP6B	D-3
TP6R	D-3
X601	E-2
X702	B-1

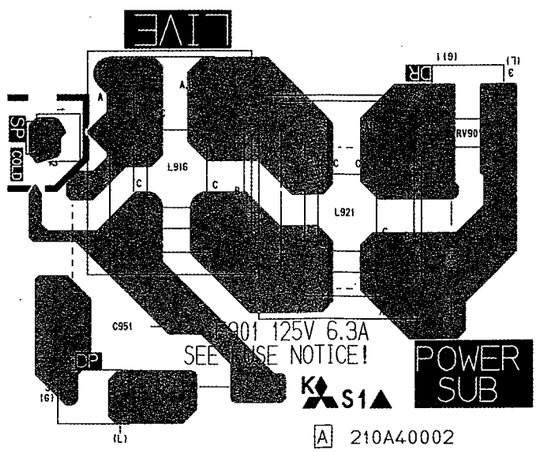
PCB-CRT/SVM



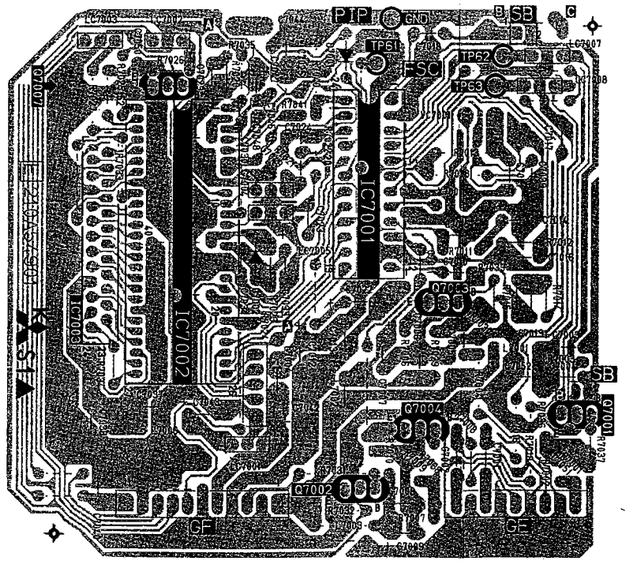
PCB-DBF



PCB-POWER-SUB



PCB-PIP



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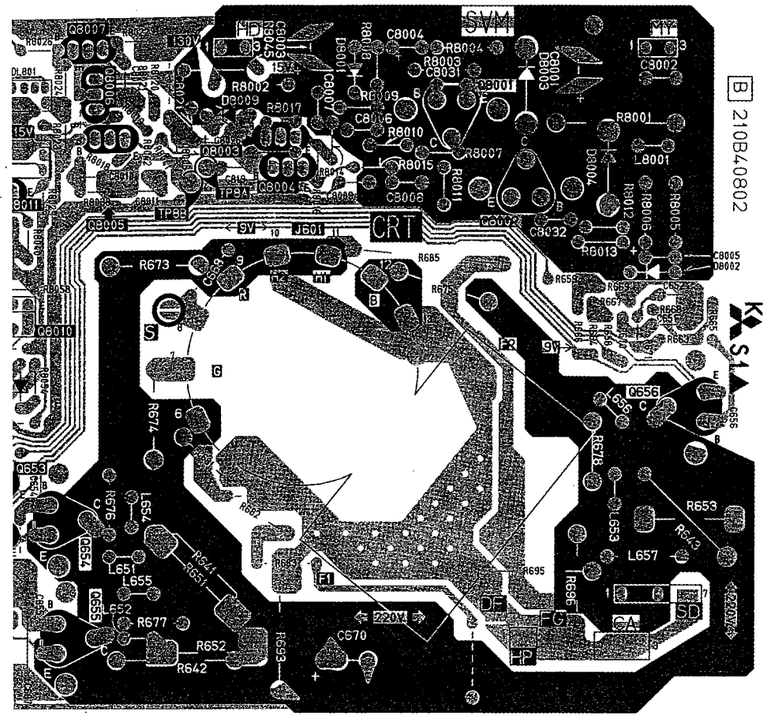
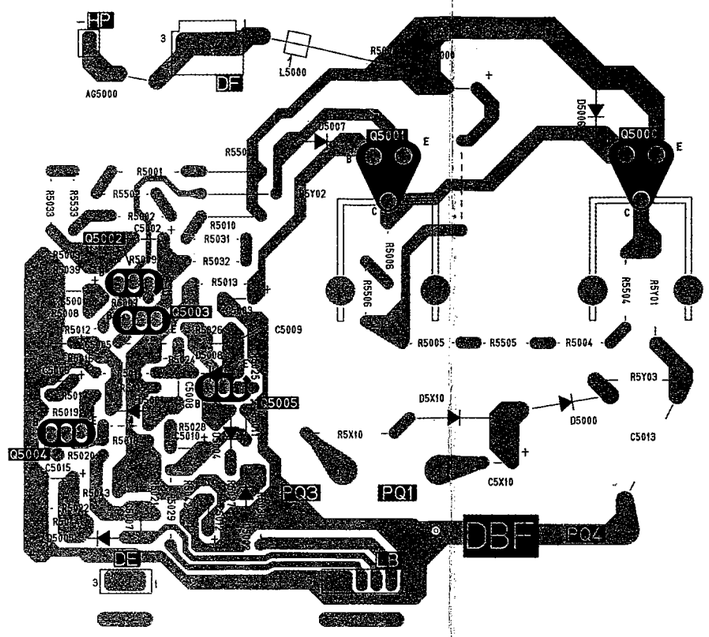


PCB-DBF



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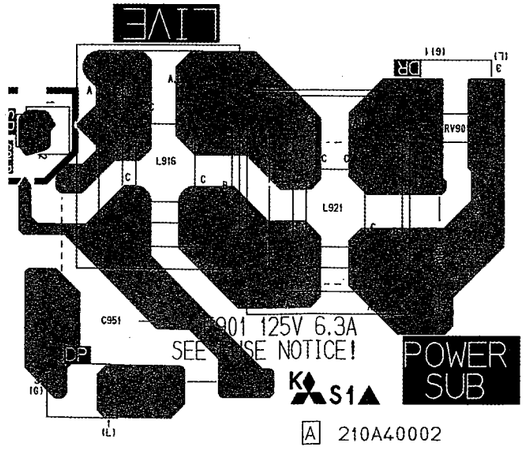

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PCB-PIP